THE WORLD'S BEST-SELLING AMIGA MAGAZINE

AMIGA FORMAT

WB3 BEGINNERS GUIDE INSIDE!

ISSUE 130 CD AND DD VERSIONS AVAILABLE



50 THINGS YOU SHOULD KNOW ABOUT YOUR AMIGA

Tips! Secrets! Know-how!

Faster Internet

Get connected with ISDN and experience the net as it should be

Maximise your Amiga

AF Exclusive! The new Z4 A1200 busboard on test

Stay at home

STFax turns your Amiga into a complete office set-up



DDs: Exterminate the bugs with a killer program and platform game



AFCD46: Exclusive demos, the latest previews and brand new ways to paint

CD DECEMBER 1999 £5.99
12
9 771363 006015

CD GAMES

BUY 3 GET A 4th FREE!

SUPERFROG
He's Back! One of the most requested games of all time. Platform action like no other game. Rated over 90% in Amiga Format Suitable for all the family!
Amiga with CD or CD32 minimum: 2mb ram
Order: CD848C £15.00

SIXTH SENSE
Arcade adventure, featuring 32 locations, full character dialog, 3 different worlds, many interactive characters, puzzles and more. Available on floppy disk or CD.
AGA Amiga CD recommended: 4mb + HD
Order: CD430C £15.00

ZOMBIE MASSACRE
Action packed 3D "doom" clone with some seriously "bloody" graphics and gut wrenching sound effects. "Should keep any Zombie Film Addict Happy!"
AGA Amiga CD minimum: 8mb, 030 + HD
Order: CD705C £15.00

SHADOW
SHADOW OF THE 3rd MOON
3D flight-simulator featuring State of the Art graphics, sound and animation. *Highly Rated Worldwide!*
AGA Amiga with CD minimum: 6mb, 030 + HD
Order: CD562C £15.00

PHEONIX FIGHTERS
Thrust brought into the 21st Century. 200 Levels, 50fps fast action, 128 colours on-screen, 15 different weapons, Ship Upgrade path, Ship Races, Dogfights and more...
A classic "old school" arcade game!
Any Amiga with CD-ROM minimum: 2mb ram
Order: CD894C £15.00

LABYRINTH OF TIME
A surreal adventure with stunning hi-res graphics to convey a brilliant sense of atmosphere. Features hundreds of locations, stunning graphics, music & sound fx.
AGA Amiga with CD minimum: 2mb ram + HD
Order: CD613C £15.00

IMPERATOR
Fight your way to the top of the Roman Empire in this new strategy simulation. 28 different barbaric armies, up to 3 players. Re live ancient times.
Amiga with CD minimum: 2mb ram
Order: CD929C £15.00

THE PROPHET*
Features over **200,000 locations** with over 50 different types of location. There is no fixed route through the game. Full graphical display of your character showing the different armour worn and weapons held. There's dozens of different items, Keys, food, potions and spells. Loads of fantastic monsters to face. *What all RPG addicts have been waiting for.*
Amiga with CD minimum: 2mb ram + HD
Order: CD860D £20.00
*This CD cannot be chosen as the free title.

BUY 3 GET A 4th FREE!

EAT THE WHISTLE
Farcical, Arcade and Simulation modes. Full spoken commentry, 30 pitch conditions, All 32 World Cup teams. *Optimised PPC Patch available!*
AGA AmigaCD minimum: 6mb,030 +HD
Order: CD679B £10.00

DOOM D-1000
A staggering 1000 new levels for Doom 2. Supplied with simple to choose level requester to make it real easy to play all these levels.
Requires: Doom2 minimum: 2mb ram
Order: CD796B £10.00

JET STRIKE
Over 200 missions, Multiplayer option, 60 types of weapon to choose from. Over 60 different aircraft - MiG29, F-22, F-117A, Spitfire & more...
AGA Amiga with CD-ROM minimum: 2mb ram
Order: CD878B £10.00

WORD GAMES
The best collection of word games - Scrabble, Word Finder+, Wordsearch, Crossword Creator, Hangman, Crossword Solvers and "pen & paper" games.
Amiga with CD-ROM minimum: 2mb ram
Order: CD852B £10.00

TOTAL TETRIS
Around a hundred variations of the all-time classic game "Tetris". All the games are runnable from the CD.
Makes a great gift for anyone!
AGA Amiga with CD-ROM minimum: 2mb ram
Order: CD762B £10.00

PRODUCTIVITY

BUY 3 GET A 4th FREE!

100% COLOUR
100% Colour Clips is a brand new original collection of thousands of high quality GIF and IFF clipart images. Cats, birds, office equipment, household items, trees and much more.
Any Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD621B £10.00

100% MONO
100% Mono Clips is a brand new original collection of over 10,000 high quality GIF and IFF clipart images. Includes Eye-catchers, Animals, Vehicles, Xmas, Symbols, Wedding art and more.
Any Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD622B £10.00

CONVERTERS
Includes all you need to convert from files from one format to another. IFF, GIF, TIF, BMP, WAV, VOC, SND, MOD, TXT, DOC, WRI, PCX etc etc...
Any Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD624B £10.00

PAINT & CREATE
Features all you need to create stunning animated cartoons. Animation tools, Sound FX, Backdrops etc. *Synchronise Samples to frames of your anims.*
AGA Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD882B £10.00

45,000 WEB CLIPZ
One of the largest collections of Web graphics available. Includes around 25,000 Animated Gifs and 20,000 Gifs :- *Buttons, Borders, Clips etc.*
AGA Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD879B £10.00

THE MIDI FILES
Possibly the best collection of MIDI files available- Virtually all the files are well known. From ABC to Madonna to U2 to Whitney Houston. *1000's of files...*
Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD887B £10.00

DESKTOP VIDEO
Features a huge amount of quality video backdrops for Scala plus a large amount of "anti-alias" fonts - Brilliant quality! Includes full version of SCALA.
Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD404B £10.00

WINBENCH
Drivers, Libraries, Patches, HD Installers, Backdrops, Commodities, Menu systems, Tools, Diagnostics, Datatypes etc. *The Definitive WB Enhancer CD.*
AGA Amiga with CD-ROM minimum: 4mb ram + HD
Order: CD680B £10.00

WB ENHANCER
Over 10,000 Magic Workbench Icons and Workbench backdrops as well as many tools. *CD Includes : Magic Workbench.*
AGA Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD187B £10.00

REFERENCE

EPIC ENCYLOPEDIA
20,000 Articles. Features online help, hundreds of AVI film clips, images, sound samples and subject information text. A superb reference and educational title for the whole family.
AGA Amiga CD rec: 6mb, 030 + HD
Order: CD462D £20.00

PARANORMAL
An exciting multimedia CD. ***UFOs & Aliens, Strangelife,*** and more. Masses of AVI's, and animations, hundreds of voice-overs, Presentations, Over 400 subject synopsis'.
AGA Amiga CD rec: 6mb, 030 + HD
Order: CD223C £15.00

DRIVING THEORY
KEY TO DRIVING THEORY
"KTDT" is an interactive test to aid revision of the Highway Code for learner drivers. It consists of all the latest questions.
AGA Amiga CD min: 4mb ram + HD
Order: CD672C £15.00

AMI-ATLAS 5
An exciting UK & Ireland Atlas/Route Planner. *Features:* Location to location. Unlimited stops and round traveling. Shortest, Fastest and Cheapest routes. Scalable map display. Map editor. Detailed hotel information. Overview and description of most Theme Parks and Attractions. Completely user configurable. (c)1999
"An essential new tool for anyone taking a trip"
AGA Amiga CD rec: 8mb, 030 + HD
Order: CD923I £45.00

CD GAMES

GREAT VALUE COMPILATIONS!

AMIGA CLASSIX
This great value original CD contains over ***50 Full Games.*** *Take a look!* **Amegas, DNA, Testament, Charlie J. Cool, Full House Poker, PP Hammer, Starblade, Zero Gravity, Boondar** and many more. Also contained on the CD is around 300 all-time classic game-demo's.
Any Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD526C £15.00

ARCADE CLASSIX
Arcade ClassiX MKII includes over 1,200 variations of all your favourite arcade games, such as *Pacman, Invaders, Tron, Galaxians , Frogger, Tempest, C64 conversions, Q-Bert, Trail Blazer, Scramble, Ping-Pong, Pengo, Missile command, Breakout, Bezerk, Donkey Kong* and tons more great games.
Any Amiga CD minimum: 2mb ram + HD
Order: CD589C £15.00

GAMES ROOM
The Games Room is an original compilation of Gambling games. It covers everything from **Fruit Machines** to **Card Games**, including **Klondike, Solitaire, Rummy, BlackJack, and Roulette, Darts, Bingo, Pool, Checkers, Chess, Backgammon, Poker, Dominoes, Various Board Games like Monopoly and Cluedo, Mastermind, Pub Quiz's** and more...
Any Amiga CD minimum: 2mb ram + HD
Order: CD451C £15.00

CDS COLLECTION
15 Full Games - Every available game that CDS has released for the Amiga. **The Times Crossword, Colossus Chess X (ECS & AGA), Daily Double Horse Racing, Centrefold Squares, Deluxe Strip Poker 1,2 & 3** plus loads of extra players, **European Superleague, Colossus Bridge 4, White Death, Jigsaw Puzzle Mania, The Sun Crossword, Steve Davis World Snooker** and more...
Any Amiga CD minimum: 2mb ram + HD
Order: CD854C £15.00

A7+
A Brand New games collection featuring Seven Full Amiga Games :- **S*M*A*S*H, Ooze, Ant Wars2, Bazza`n`Ruint, Trap'Em, Jimmy's & RocketZ.**
AGA Amiga with CD-ROM minimum: 2mb ram
Order: CD875B £10.00

BEST OF GREMLIN
25 Full Games - Virtually Every game that Gremlin has released for the Amiga. **Artura, Butcherhill, Combo Racerm BSS Jane Seymore, HATE, Dark Fusion, Deflektor, Disposable Hero, F.O.F.T, Herlequin, Impossamole, K240, Litil Divil, Motor Massacre, Pegasus, Plan9, Premier Manager1,2&3, PM3MultiEdit, Shadow Fighter, Skidz, Super Cars1&2, Switchblade1&2, Super Scramble, Techno Cop, Top Gear2, Utopia, Vampires Empire Venus Flytrap, Video Kid, Zool and Zool2.**
Any Amiga with CD-ROM rec: Extra ram + HD
Order: CD856F £30.00

ISLONA COLLECTION
10 Full Games - Virtually all the original *Islona* floppy based games on one CD. **Testament, Blockhead, Blockhead2, Cygnus 8, Mobile Warfare, Abduction, World Golf, Marbleous, Lost On Parrot Island,** and **Virtual Karting 2 CD** Free!
Any Amiga with CD-ROM rec: Extra ram + HD
Order: CD855E £25.00

VULCANOLOGY
Contains all ten of Vulcan's "mini series" games. **Jet Pilot, Burnout, Tiny Troops, Time Keepers 1&2, Bograts, Hillsea Lido & Valhalla 1, 2 & 3.**
AGA Amiga with CD-ROM minimum: 2mb ram
Order: CD795B £15.00

MUTANTOLOGY
A new games collection containing 10 full games: **Tin Toy Adventure** - A slick and addictive platform game, **Castle Kingdoms** - A game of battle, magic and adventure, set in a land of monsters & treasure. And **Tommy Gun** - A complete bonkers "Point Blank" style of game. ***PLUS*** Seven other snazzy action games!
AGA Amiga CD minimum: 2mb ram
Order: CD925C £15.00

ADVENTURER'S LAIR
Features 10 full Adventure/RPG games: **Legend of the Elves, Federation:-** ***Space Adventure,*** **Blood Fest, 7 Realms, Lost On Parrot Island, Dungeon Hero, Child Murderer, Mad House, Total Species and Legends of Lothian.**
Also features a huge database of Solutions for dozens of Amiga Adventure games.
AGA Amiga CD minimum: 2mb ram
Order: CD924D £20.00

EMULATORS

BUY 3 GET A 4th FREE!

FLASHROM 2
The Emulators Archive: Hundreds of Emulators covering, C64, Spectrum, C16, Amstrad, Atari ST, BBC, C16 and loads more.
Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD623B £10.00

SPECCY 3000
Play over 3000 Classic Spectrum Games on your Amiga, Includes the latest Amiga emulators and thousands of Games.
Amiga with CD-ROM minimum: 2mb ram + HD
Order: CD888B £10.00

MSX NOSTALGIA
Includes over 500 original MSX games all ready to run through the latest MSX software emulator. Games include original arcade versions of Mappy, Zaxxon, Nemesis, and the classic, Galaga and more.
AGA Amiga with CD-ROM minimum: 4mb ram + HD
Order: CD673B £10.00

C64 CLASSIX
Play over 3000 Classic full Commodore 64 games on your Amiga. Includes the latest C64 Amiga emulators and thousands of original full Games. Easy to use menu system!
AGA Amiga with CD-ROM minimum: 8mb ram + HD
Order: CD707B £10.00

CPC CLASSIX
Hundreds of retro Amstrad CPC games on your Amiga. Includes the latest easy to use CPC Amiga emulator.
AGA Amiga with CD-ROM minimum: 4mb ram + HD
Order: CD703B £10.00

PUBLIC DOMAIN

BUY 2 GET A 3rd FREE!

EPIC COLLECTION
The Epic Collection Volume3 features well over 600mb of the very best Amiga games, tools, images and music. It also contains over 80 disks of educational software.
Amiga with CD-ROM minimum: 2mb ram
Order: CD405B £10.00

SCENE ARCHIVE
Virtually every mega-demo ever made on the Amiga. From 1988 to the end of 1998. Each year/style is separated so finding a particular demo is easy and most run direct from the CD.
Amiga with CD-ROM minimum: 2mb ram
Order: CD811B £10.00

17BIT LEVEL 6
The very latest 17BIT disks. All the best titles are here. Through an easy to use interface you have access to around 1000 brand new Amiga disks, most not available on any other CD.
Amiga with CD-ROM minimum: 2mb ram
Order: CD495B £10.00

ZIP TOOLS
Own a Zip or Jazz Drive? - This CD contains all you need. Store 200mb on a 100mb Zip. Read and Write Amiga, Mac & PC Zip Disks and more...
Amiga with CD-ROM minimum: 2mb ram
Order: CD870B £10.00

DEVELOPMENT

BLITZ BASIC
BLITZ BASIC 2.1
A next generation BASIC with features borrowed from PASCAL, C and others. Contains the complete series of Blitz User
AGA Amiga with CD-ROM minimum: 2mb ram
Order: CD500C £15.00

AMI-DEVROM
A unique collection of development tools and documentation. Includes GNU C++. Not only that but also Amiga E and source code for Blitz, E, C++ etc...
Amiga with CD-ROM minimum: 2mb ram
Order: CD807B £10.00

AREXX FOR BEGINNERS - The complete ARexx reference manuals, Arexx Tutorial and Arexx Beginners guide with many examples...
Amiga with CD-ROM. Minimum: 2mb ram **Order: CD826B £10.00**

MISC CD-ROMS

CHEATZ
Huge collection of Amiga Hints, Walk-through's, Tips and Cheats available. This CD features guides to over 10,000 Amiga Games. All accessable through Amiga Guides on the CD.
Amiga with CD-ROM minimum: 2mb ram
Order: CD851B £10.00

PATCHEZ
Largest collection of Hard Drive installers available. Contains thousands of Hard disk installers for thousands of old and new Amiga Games.
Amiga with CD-ROM minimum: 4mb ram + HD
Order: CD847B £10.00

THE EPIC PROMISE: ***WE GUARANTEE MOST ITEMS TO BE AVAILABLE FROM STOCK AT ALL TIMES.***

AMINET CD'S

BUY 2 AND GET UK P&P FREE!

AMINET SET 8 — Amiga with CD-ROM minimum: 2mb ram + HD — *Order: CD886F £30.00*

Includes full versions of CygnusED, Art Effect and Directory Opus5.5. Over 4gig of new software. 600mb never before released on any CD.

Each Set Includes 4 CD's each with over 3gig of Software! £30 each.

- AMINET SET 4 *Includes full Directory Opus 5*
- AMINET SET 5 *Includes full Octamed Sound Studio*
- AMINET SET 6 *Full Wordworth 5, TurboCalc3.5*
- AMINET SET 7 *Full Picture Manager4, XiPaint4*

Don't Know what Aminet is? Order the Aminet Sampler CD. Only £5 (CD895A)

CABLES ETC

Amiga - 1084/Philips Monitor (Please state)	£12.99
Amiga - Scart TV / Monitor	£12.99
Dual Joystick/Mouse Extension	£3.99
Amiga - Amiga Parallel Networking	£14.99
Amiga - Amiga or PC Serial Network	£12.99
Amiga TV RF Cable	£2.99
Joystick Splitter lead	£3.99
Joystick Extension Cable (2metres)	£3.99
Amiga A600/A1200 Joysick/Mouse Port	£9.99
Amiga - PC Linkup (Parallel)	£17.99
Amiga 4 Player Adaptor	£9.99
Analogue Joystick Adaptor	£9.99
Printer Cable	£3.99
A600/A1200 to 3.5" Harddrive (44pin - 40pin)	£19.99
2.5" Harddrive cable (5cm)	£9.99
Female Jack to 2 Phono (Audio Adaptor)	£3.99
Amiga - Amstrad CPC Monitor (6pin)	£9.99
Amiga - Amstrad CPC + Monitor (8pin)	£14.99
Amiga - MicroVitec (6pin)	£14.99

ESSENTIAL

A1200 HARD DRIVE PREP & INSTALLER	£7
WORKBENCH3.1 SET	£15
WORKBENCH3.0 SET	£10
WORKBENCH2.x SET	£10
WORKBENCH1.3 SET	£8
ZAPPO/ARCHOS/Q-DRIVE CD SOFTWARE	£7
100 MISC. PRINTER DRIVERS	£3
NEW PRINTER DRIVERS	£5
EPSON PRINT UTILITY (Drivers for most Stylus')	£5
SQUIRREL SCSI CD-ROM SOFTWARE	£5
GAME BOOTER - Run old games on A1200	£3
A1200 DEGRADER	£3

WORKBENCH 3.0 *Includes Workbench, Storage, Extra's, Locale,Fonts and Install3.0. A bargain at just £9.99*

MERCHANDISE

Amiga Dust Cover (State Model)	£2.99
Amiga Logo Disk/CreditCard Wallets	£1.99
Amiga Boing! Mouse Mat	£3.99
Official Amiga Mouse & Mat	£9.99
Keep The Momentum Going (Amiga Theme CD2)	£5.99
Amiga Sports Socks (White with Boing! Logo)	£5.99

ADULT

HOT HOUSE WIVES — AGA Amiga with CD-ROM minimum: 2mb ram — *Order: XCD592 £15.00*

A huge collection of amateur photographs of REAL women. *Just what do they get up to during the day?* Only Suitable for Adults....

- ADULT SENSATION 5 (xcd567) - 30 Games
- PAGE 3 GIRLS (xcd548) - Around 700 Adult Images
- ANIME BABES SE (xcd491) - 3,000 Manga Pictures
- RUBBERAMA (xcd553) - Hundred's of Images
- JUST 18 (xcd282) - Around 600 Adult Pix
- READERS WIVES 2 (xcd727) - Around 500 Pix
- ASIAN BABES (xcd294) - Around 600 Asians
- TEENAGE DREAMS (xcd711) - Around 500 Pix
- AMATUER ACTION (xcd728) - Around 500 Pix
- DUNGEON EROTICA (xcd529) - Around 600 Adult Pix

ALL £15 each - Buy 3 and get the 4th FREE!!!

ADULT CATALOGUE AVAILABLE
*Call 0906 55 31900**
Order an adult catalogue on this line and you'll be sent a complete Adult CD-ROM and Video Catalogue as well as **2 Adult CD's FREE.**
*State you are over 18 when ordering *(£1 a minute) State: Amiga when ordering.*

PERIPHERALS

Any Single Joystick ~~or Pad~~ Only £10 Any 2 for Just £15

CRUISER JOYSTICK

ZIP-STICK

ANY JOYSTICK £10 ANY 2 FOR JUST £15

COMPETITION PRO *MINI or STANTARD*

MORE AMIGA PERIPHERALS

OFFICIAL AMIGA MOUSE
High quality 400dpi "official" mouse with mouse mat.
Order: AM01x (Mouse & Mat) £9.99
Order: Boing (Mat Only) £3.99

VGA MONITOR ADAPTOR
Plugs into your Monitor port and allows use of any SVGA PC monitor on the Amiga. *WB3 req.*
Order: VGA £14.99

MOUSE IT
Plug virtually any PC serial mouse, trackball or Pen into your Amiga.
Order: MouseIT £4.99

CD32 GAMES

FEARS — AGA Amiga with CD-ROM or CD32 Console — *Order: CD927B £10.00*
Possibly one of the Amiga's most impressive and in-depth "Doom" clones available. Stunning 256 colour graphics and seriously atmospheric sound.

ROADKILL — AGA Amiga with CD-ROM or CD32 Console — *Order: CD928B £10.00*
Smash & Blast your way around numerous city-scapes in this all action "birds-eye" Blaster. Polished 256 colour, 50 frames/sec scrolling and animation.

SIMON SORCERER — AGA Amiga with CD-ROM or CD32 Console — *Order: CD563B £10.00*
A true classic adventure. An essential purchase for every Amiga owner. Stunning hand-drawn graphics and "spoken" dialog throughout the whole game.

PREY: Alien Encounter — AGA Amiga with CD-ROM or CD32 Console — *Order: CD930B £10.00*
Explore the huge space station and listen to 'live' radio communications. Fully rendered slick 3D game. "True Ridley Scott atmosphere" *Rated 91%*

PRODUCTIVITY

FANTASTIC DREAMS — Amiga with RTG or AGA 68k or PPC, 16mb RAM — *Order: CD798L £60.00*
A far more advanced version of the top rated "Elastic Dreams", Now includes FunRoom containing 500 premade clips, like eyes, noses etc.

CANDY FACTORY — Amiga with RTG or AGA 68k or PPC, 16mb RAM — *Order: CD797G £35.00*
Take any common Amiga font and create a impressive looking logo with light reflections, bump mapping, textures etc.. **Rated 92%**

GOLD CARD

The New Epic Gold Card
Request one when you order and save today!
What you'll get...
Exclusive Gold Club CD
20% OFF your order, Today!
Regular Catalogues & Offers
Use our "EasyOrder" system and save time.
Upto 20% OFF future purchases
Request your Gold Card Now. Only £10

CD GAMES

ORDERS NOW BEING TAKEN

SHOGO

SHOGO: Mobile Combat Armor
- Choose from four ultra powerful transforming Mobile Combat Armor suits.
- Multiple Play Modes
- Pilot your MCA through : deadly outdoor, underground, and city missions.
- Cutting Edge 3D with LithTech- one of the most advanced next-generation 3D engines in gaming.
- Wield over 20 incredibe weapons.
- Immersive Gameplay
- Gripping story, characters you will grow to love or hate.
- Awesome Audio
- Take on your friends via modem, network and internet play!

Amiga with RTG or AGA Minimum: 16mb, PPC + HD — *Order: CD921F £30.00*

HERETIC 2
Beginning many years after the original Heretic, Heretic II sets you upon an epic quest across an entire continent to find a means to cleanse a world infected with a deadly magical plague that has victimized the people of the realm. As Corvus, you perform a variety of acrobatic, swimming and climbing maneuvers in order to penetrate the mystery of the plague. "Tomb Raider, Who needs it!"

Amiga with RTG or AGA Minimum: 16mb, PPC + HD — *Order: CD922F £30.00*

TALES FROM HEAVEN
Tales From Heaven, the first Mario N64 clone for the Amiga! Play with Zak among 4 worlds full of enemies, treasures, surprises.
- RTG Compatible.
- 68040 and 68060 optimized.
- 4 Worlds with 4 levels each.
- Superb high speed 3D engine
- Full 360 degree 3D Action
- Audio tracks and stereo sound FX
- Joypad, Keyboard and Mouse.

AGA or RTG Amiga with CD-ROM Minimum: 8mb, 030 + HD — *Order: CD904E £25.00*

WIPEOUT 2097
It has finally arrived, The Playstation™ smash hit is now available for the Amiga.

AGA Amiga CD 16mb, PPC + HD + RTG — *Order: CD943F £30.00*

APPLICATIONS

PRO MIDI INTERFACE
Connects to your serial port and offers in/out & through ports.
Order: PROMIDI £24.99

MEGA-LO SOUND SAMPLER
High quality 8bit Direct to Disk/Ram sampler. Suitable for use on any Amiga.
Order: MEGALO £34.99

AMI-PC LINKUP
Make use of the PC's CD-ROM drive, Zip HD Floppy etc. Great for transfering files.
Order: AMI-PC LINKUP ***New Price £14.99***

TURBO PRINT 7
Get the highest quality print from ALL the latest printers. (Inc Epson 440/740 etc)
Order: TP7 £39.99

OXYRON PATCHER
The essential patcher for all 040 and 060 accelerator owners.
Order: OXYPATCHER ***New Price £14.99***

FREE

CHOOSE 1 CD FREE WHEN YOU SPEND £30 OR MORE

SOFTWARE EXPLOSION Volumes 1, 2 or 3

CD GAMES

THE HOTTEST NEW RELEASES

STAR FIGHTER
Star Fighter D'Yammens Reign is an exciting new 3D Space Combat Simulation.
- 110 Missions to choose from.
- Sampled speech throughout
- Lens flare from local sun.
- Direct from disc audio tracks
- Digitised explosions.
- Interactive talkback radio - you direct the action!
- Fully rendered, full motion cutscenes
- Choose from 8 fighter craft - stunt ships, and cruisers.
- Choose your allegiance. Be the Good guys or the Bad!
- Save your Full Campaign progress.
- Arcade or Simulation mode.
- 3D space combat action.

Amiga with CD Minimum: 8mb, 030 + HD — *Order: CD704D £20.00*

VIRTUAL GP
It's finally arrived :- The Amiga's most realistic Formula 1 Racing Simulation. Unbelievably smooth 3D texture-mapped graphics. *Optimised for 040/060*
- 16 tracks, 22 cars
- Full texture-mapped, gouraud-shaded 3D engine. Gfx-boards supported.
- Full in-game Commentary & Speech.
- Very detailed car specs...
- Improved Artificial Intelligence of opponents to make the race thrilling.
- Support for mouse, digital and analogue; simplified car control method using digital.
- Instant Replay, to see your favourite car passing, crash, tail-head, etc.
- 6 different camera views, featuring the VirtualCockpit system: inside car, just-behind, far-behind, 360 degrees, track camera. Possibility to see every different car with every camera view.
- Full multitasking.

Amiga with CD Minimum: 8mb, 030 + HD — *Order: CD626D £20.00*

ANIMAL KINGDOM
Bertie's Animal Kingdom is an Animal recognition game designed for **nursery,** and **pre-school children.**

In the game the child is helped along by a cartoon character called "Bertie" He gives them a task to perform, tells them what to do, and when the task is complete he tells them how well they did. Each question answered correctly will award them 1-3 gold stars which are shown at all times in the top left of the screen. This is to encourage them to beat this score with each new attempt.

Amiga with CD-ROM Minimum: 2mb + HD — *Order: CD905B £10.00*

FOUNDATION DC
'Foundation DC' is a real-time strategy war game which incorporates familiar strategy elements with interesting new concepts.
- Full CyberGraphX, P96 & AHI.
- AGA Supported with fast new c2p, so AGA looks identical to RTG.
- New Rendering System.
- Faster Gameplay.
- Support for custom speech.
- Improved AI system.

AGA Amiga with CD-ROM Minimum: 8mb + HD, 030 rec. — *Order: CD901C £15.00*

SIM LIFE
In Sim Life take the challenge of our inbuilt scenarios or create your own unique world where your imagination can run riot. Design plants and animales, then deside how they act, how (even who) they eat - even how they reproduce! Now watch the world evolve in front of your very eyes, as a completely new enviroment takes shape under your command. Will you be responsible for a tropical paradise, an arctic wasteland - or a planet inhabited with even stranger creatures than this one?.
More than a game. It's evolutionary
Optimized for more ram and better processors.

AGA Amiga (Supplied on Disk) Minimum: 4mb, HD — *Sim Life oem £9.99*

epic marketing *Innovative and Original*
Ten Years with the Amiga!
www.epicmarketing.ltd.net

08700 110013
Enquiries: 0 1793 514188 Fax: 0 1793 514187
Catalogue Requests: 0906 553 1900
Calls to this number should last around a minute and cost about £1.00
Open Mon - Fri

POSTAGE
UK: £2.95 per order (Software & Peripherals). Overseas: £5 per order. "Large Hardware" delivery in the UK: between £5 - £10 (call for price) *Minimum Order £5*

All items are sold subject to our normal terms and conditions and are subject to availability. *Free Software is only offered on Software purchases, and only sent at the time of ordering. Titles have been tested on A1200 based Amiga's, call for compatibility of A500 etc. AGA = A1200/A4000 required oem = unboxed. A catalogue is sent with all orders. **When ordering please state product code, title and price.** Credit card orders are normally dispatched within 48 hours. E&OE All prices include VAT. Cheques and Postal Orders should be made payable to **EPIC Marketing.**

SPECIAL OFFERS WHILST STOCKS LAST

EXTERNAL SCSI HARD DRIVES WITH POWER SUPPLY
540 MB £39.95
1.08 GIG £59.95
4.3 GIG £149.95

14" COLOUR AMIGA MONITORS WITH SWIVEL STANDS £69.95

CD32 WITH POWER SUPPLY £79.95

CD32+SX32 Pro including 030 accelerator + 8mb RAM £149.95

TRACK BALLS ONLY £19.95

NEW **Z4 BOARD** FROM APOLLO £124.95

AMIGA SALES & REPAIRS WHILE-U-WAIT!!

The only Amiga repair centre in the UK recommended by Amiga International

ALL REPAIR PRICES INCLUDE LABOUR, PARTS & VAT • 3 MONTHS PARTS & LABOUR WARRANTY • 24 HOUR TURN AROUND ON MOST COMPUTERS INCLUDES FULL DIAGNOSTIC, SERVICE & SOAK • UPGRADES FITTED FREE WITH REPAIR • £10.00 EXTRA CHARGE FOR WHILE-U-WAIT SERVICE • PICK UP & DELIVERY SERVICE AVAILABLE

MONITORS
14" DIGITAL SVGA £89.00
15" DIGITAL SVGA ..£119.95
17" DIGITAL SVGA ..£189.95
3 YEARS ON SITE WARRANTY

SCANNERS
UMAX FLATBED SCANNER plus SOFTWARE £149.95

FIXED REPAIR CHARGES
inc. all parts, labour & VAT
A500, A500+ A600 £39.95
A1200 £49.95
A1500, A2000 A4000 Quotation

APOLLO ACCELERATORS
1230/40 ....£59.95
1240/28 ....£119.95
1240/40 ....£179.95
1260/50 ....£259.95
1260/66 ....£POA

SCANDOUBLER
Internal £49.95
External £49.95

FLICKER FIXER
Internal £79.95
External £79.95

ProGRAB 24
£99.95

MEMORY UPGRADES
A500 TO 1MB.............£13.95
A1200.... 8MB £39.95
A1200.....4MB £34.95
A500+ TO 2MB £19.95
A600 TO 2MB £19.95
(Upgradeable to 8MB)

SIMMS MEMORY
4MB £9.95
8MB £14.95
16MB £29.95
32MB £49.95
64MB ....£POA
Discount available when bought with accelerators

INTERNAL FLOPPY DRIVES
A500 / A500+ / A600 / A1200 / A2000 ..£24.95
These drives work as High Density in A1200

IDE FIX, BUDDHA & CATWEASEL
4 Way Buffered Interface +IDE Fix £29.00
Buddha Flash IDE Controller £49.00
Catweasel Mk 2 ....£49.00

PICASSO
Hi Res Graphic Card....£249.00

NEW GENLOCK
for all Amigas £69.95

INTERNAL CD-ROM DRIVES
INTERNAL 44X IDE £49.95
INTERNAL 4XSCSI £49.95

INTERNAL & EXTERNAL CD-ROM RE-WRITEABLE DRIVES
Please ring for latest prices

EXTERNAL SCSI CD-ROM DRIVES including Squirrel
4xSCSI CD-ROM £99.95
4XSCSI + 1Gig SCSI HDD £189.95
4xSCSI + 520MB SCSI HDD £169.95
4XSCSI + 4.3Gig SCSI HDD £249.95
External SCSI CD-ROMs + SCSI Hard Disk Drives come in one award winning case

PC Keyboard Adaptor £14.95

AMIGA COMPUTERS & TOWER CASES for A1200 & A4000
A1200 + 120Mb HD £179.95
A1200 + 340Mb HD £199.95
A1200 + 720Mb HD £239.95
A1200 + 810Mb HD £249.95

PLEASE CALL FOR OTHER 2.5" & 3.5" HDD CONFIGURATIONS

TOWER + Mouse + PC Keyboard £129.95
TOWER + A1200 Motherboard + Mouse + PC Keyboard + FDD + 4.3Gig Hard Drive...................................£399.95
TOWER as above + Typhoon Accelerator 68030/40 with 8Mb + Buffered Interface + IDE Fix £499.95
(Please add extra £49.95 to include 44x IDE CD-ROM Drive)
RBM A4000 Towers available from stock.
A2000 and A4000 computers in stock now.

FREE FITTING
into Tower all items bought from Analogic

A1200 Motherboards
without ROMS............£99.00
with ROMS £125.00

Amiga 3.1 Operating System
3.1 ROMs for A1200 ..£24.95
3.1 ROMs + Disks + Manuals for A1200 ....£39.95
3.1 ROMs for A4000 ..£29.95

A1200 HEAVY DUTY
Power Supply........£39.95

HARD DRIVES

2.5" IDE
120Mb £44.95
340Mb £54.95
720Mb £64.95
810Mb £69.00
1.1Gig.................£99.95
1.8Gig...............£114.95
2.1Gig...............£119.95
3.2Gig...............£129.95
4.1Gig...............£149.95
6.4 Gig £199.95
10.0 Gig £299.95

3.5" IDE
2.5Gig..................£99.95
4.3Gig..................£99.95
8.4Gig................£149.95
13 Gig................£189.95

3.5" SCSI
540MB £39.95
1.08Gig...............£59.95
4.3Gig...............£149.95

All Hard drives are pre-formatted, partitioned with Workbench loaded.
All 2.5" hard drive prices include cable, software & screws for fitting.
2.5" IDE Cable & software if bought separately ...£9.95
3.5" IDE Cable & software ...£12.00
Please add £40.00 if any 3.5" hard drive is required in external case.

GUARANTEED SAME DAY DESPATCH
Subject to availability Please call for any Amiga Hardware not listed in this ad

NEW
Amiga OS 3.5 upgrade...£34.95
ROM 3.1 + OS 3.5 upgrade...£54.50

ZIP DRIVES
External SCSI Zip Drive...£139.95
(software & cable included)
Internal ATARI Zip Drive + IDE Ax £99.95
Internal ATARI Zip Drive..£69.95
External 250 mb SCSI Zip Drive £189.95
Zip Cartridge 100 mb £12.95
Zip Cartridge 250 mb £19.95

TRADE IN YOUR AMIGA FOR A PC
Low price PCs available for Internet/Email
WE BUY DEAD OR ALIVE A1200, A2000, A3000, A4000
Ring us for a reasonable offer for your A1200/A4000 computer (or just motherboard) – in any condition

56.6K Fax/Voice MODEM
Including all cables plus ibrowse software, Net & Web plus one month free with Demon
£69.95

CHIPS • SPARES • ACCESSORIES (Please ring for chips/spares/accessories not listed here)

ROM 2.05 ....£19.00	PCMCIA V Adaptor £19.95	50 pin male to male Centronic Lead £14.95	PC Keyboard.........£14.95
A500/A500+ Keyboards £19.95	Amiga Mouse + Mat.....£14.95	50 pin female to male Centronic Lead £14.95	Original A4000 Keyboard......£39.95
A600/A1200 Keyboards £19.95	Amiga SCART Lead £14.95	Amiga Monitor Leads £14.95	80 watt Speaker.........£19.95
A500/A600/A1200 Power Supply ..£24.95	Parallel Printer Lead £9.95	Sqirrel Interface £39.95	200 watt Speaker.........£34.95
A520 Replacement Modulator £19.95	A1500/A4000 PSU ....£POA	Surf Squirrel £89.95	Standard 3 Way IDE Cable £4.95

COMPONENT SPARES: We are the largest distributor and retailer of Amiga spares in the UK

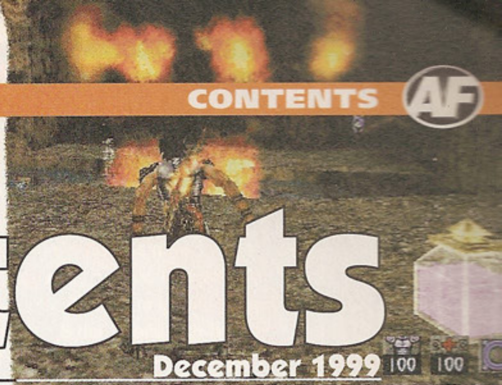
ANALOGIC
ANALOGIC
ANALOGIC

Analogic Computers (UK) Ltd
Unit 8, Ashway Centre, Elm Crescent, Kingston-upon-Thames, Surrey KT2 6HH

Open Mon-Fri 8.00am-5.30pm, Sat 9.00am-5.00pm
Ample Parking
Fax: 0181 541 4671 email: Sales@analogic.co.uk

Tel: 0181 546 9575

★ All prices include VAT ★ All prices & specifications subject to change without notice ★ Fixed charge for repair does not include disk drive/keyboard
★ We reserve the right to refuse any repair ★ P&P charges £3.50 by Royal Mail or £7.05 for courier ★ Please allow 5 working days for cheque clearance
★ All sales/repairs are only as per our terms and conditions, copy available on request.★ Please ring for latest prices.

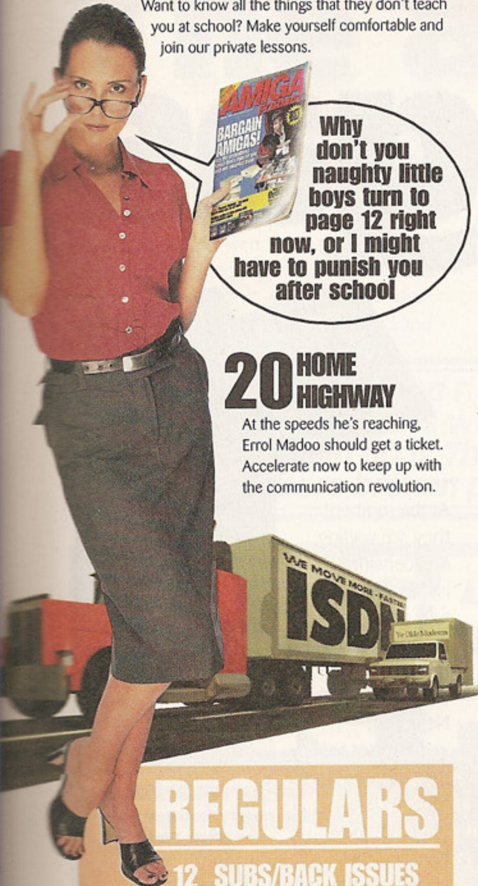


AMIGA FORMAT Contents

Issue 130

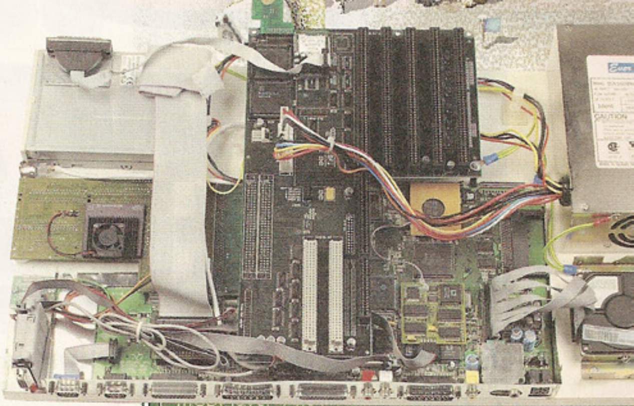
December 1999



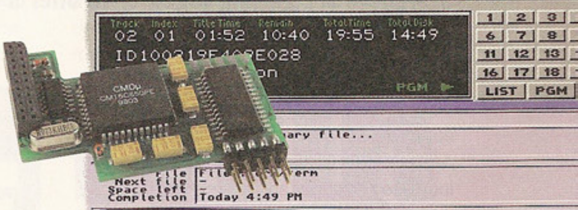


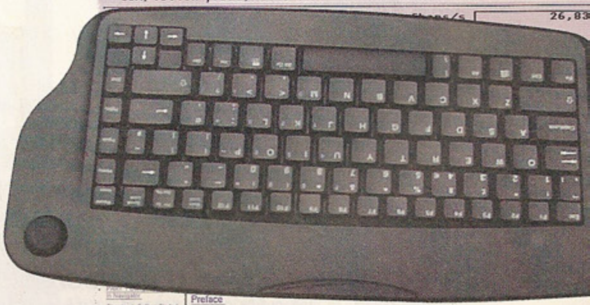
SCREEN PLAY





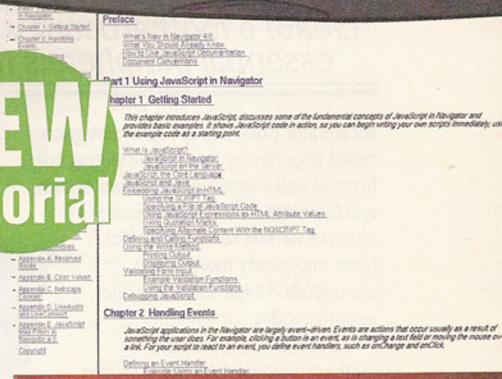
SERIOUS





REGULARS

CREATIVE





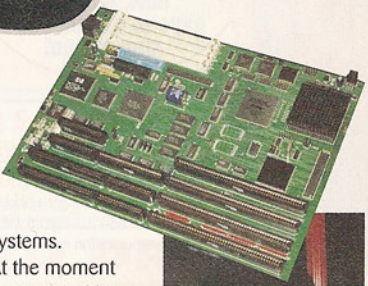
KEY: Regulars Games Serious Creative Readers Stuff



WORLD NEWS

■ Power to build new classic motherboard ■ Amino's promises
■ MCC is cancelled – Amiga explain ■ Motorola's G5 revealed

New Amigas on the way!



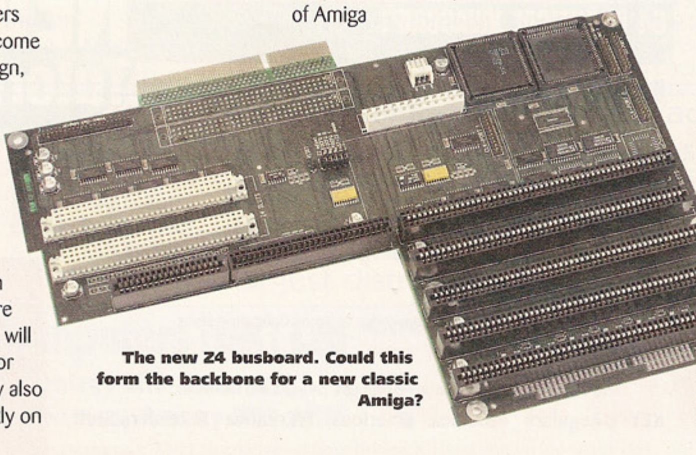
There's life in the classic Amiga yet! News has reached us that a consortium of 12 Amiga hardware designers are getting together to offer a new classic Amiga motherboard.

Although details at this time are sketchy, the new machine is planned to be backwardly compatible in every sense with existing Amiga 1200s (mainly), but will offer increased flexibility and power. The new design is thought to be based around the new Z4 concept offering extremely low cost Zorro II, accelerated Zorro II and Z4 connectors to allow for plenty of upgrading, while keeping the things that have made the bog-standard Amiga 1200 so expandable, like clock ports and the ever-useful accelerator port. The group of designers called together by Power Computing come from all walks of Amiga hardware design, and the motherboard will possibly incorporate fast serial ports, flicker fixers and plenty more of the peripherals Amiga users consider essential today.

> **Power Computing have called together a group of designers to create a motherboard with plenty of essential peripherals for the user**

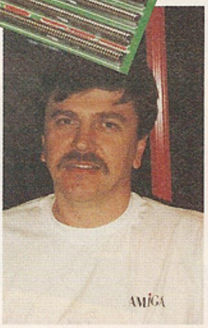
It is likely that the new motherboard will take the standard ATX form, allowing users to have them in tower or desktop PC cases which are cheap and readily available, and that it will almost certainly have a faster processor than the now ancient 68EC020. It may also include new items, such as USB directly on the motherboard, but this is speculation at the moment.

While nothing further is known about the details of the motherboard, we can conjecture that, since Power have the design rights to phase 5's popular range of non-PowerPC products, a version of the CyberVision64/3D will find its way either to the motherboard or to a new Z4 version of the card which will offer near-Zorro III speeds in a much neater package. Power are interested in comments from users on what they'd like to see in a new Amiga motherboard, bearing in mind that they want to get it finished as soon as possible. So if you have a burning desire for a particular item to be included, ring them on 01234 851500 or email them at newamiga@powerc.demon.co.uk



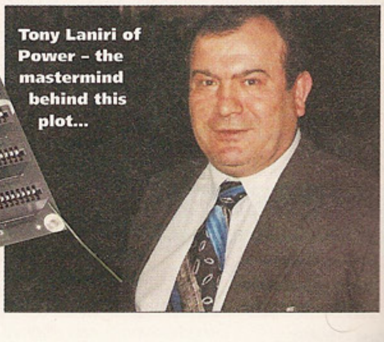
The new Z4 busboard. Could this form the backbone for a new classic Amiga?

In addition to these revelations, it seems that there is an as-yet-unnamed American company that have produced their own version of the A4000T motherboard design, an important point for people crying out for these most powerful of Amiga systems. At the moment they are waiting on licensing issues, but we fully anticipate the new machine to be available from them by the New Year.



"No, honest, I have nearly finished it'" says Mick Tinker.

Further to this, discussions recently with Blittersoft have revealed that, notwithstanding the obvious scepticism that people have for the BoXeR, it is actually now in the final stages, and will be made available by the Köln show to developers and, hopefully, punters. Obviously it's very hard for *Amiga Format* to get excited by announcement after announcement from Blittersoft regarding this new motherboard, but here's to hoping that by the time you read our next issue, we'll have had one in our sweaty mitts for a time.



Tony Laniri of Power – the mastermind behind this plot...

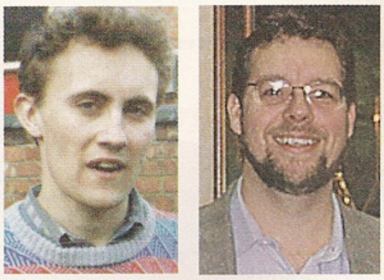


Month in view...

And I thought last month was interesting... this month we've had to deal with the fact that Amiga aren't going to make the MCC as it currently stands any longer, but are concentrating on offering those things that make the Amiga unique, to all and sundry (*like they deserve it!*). All that on top of the fact that as I write this I'm about 16 hours from getting on a plane to go on my first holiday in more than six years – what a time to pick! Oh well. There's been plenty of other stuff happening this month too. I have been eventually very impressed by OS3.5. Some people are moaning that it only comes with demos of *AWeb* and *Miami*, but they are possibly the same people who've never paid for a bit of software on their Amiga anyway, and spending the cash for OS3.5 is going to be enough of a wrench to their pockets as it is. To them I say, "Get a grip!", the software that comes with the OS was never supposed to be the be all and end all of all net software. Concentrating on the fact that you get demos of *AWeb* and *Miami* is to ignore the fact that you also get (for free!) a newer version of FFS that copes with large hard disks; an updated version of HDToolBox to better cope with it, together with an integrated version of *CacheCDFS* to look after your CDs, an ARexx port and online help for Workbench; a new icon format that is suitably colourful, together with an updated and powerful icon editor and plenty of other stuff that makes it an extremely worthwhile upgrade. The only potential fly in the ointment is if too few people upgrade their machines with this new version of the OS. Not only will the Amiga be stuck in the limbo that affected us in 1990 when OS2 first came out, but there won't be a 3.6, 3.7 and so on if sales of 3.5 aren't good enough.

The acid test

Never let it be said that the Amiga industry isn't an interesting one. Fleecy Moss, whom you should all remember as the man who got the boot from Amiga for his outspoken but visionary ways, and Bill McEwen, Amiga's erstwhile PR guy, have joined together with one other person to form Amino. Amino is their idea of how the new Amiga should proceed and is intended to be an easier upgrade path for current Amigans than the complete remodelling that Amiga are intending to do. They are planning new hardware, and new software along the lines of Fleecy's original inspiration for AmigaOS 5, with GUI personalities (to work better on varying display devices) and many other new ideas in interface design. The acid test mentioned in the headline will be whether Amino can actually produce their dream platform. *AF* spoke to both Bill McEwen and Fleecy Moss with regards to this potential new machine. Bill, suffering from near-pneumonia, was still his enthusiastic self about the prospects for their computer project, "We have the backing we need, and things are looking very bright for Amino." Fleecy, who has been accused of wanting to discuss things to death rather than do something, also maintains that, "what the Amiga market needs right now is some kind of dictator – someone to say 'this is what we're going to do', do it and then tell people what's been done. Amiga users don't want to hear any more broken promises."



Fleecy and Bill feel confident about the future of the Amiga.

> What Amiga users need right now is someone to say this is what we're going to do and do it. They don't want any more broken promises

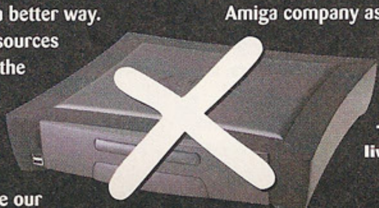
AMIGA CANCEL MCC PROJECT

Tom Schmidt, the new CEO of Amiga, has decided to cancel the Amiga MCC machine due to go on sale early next year. The net community took this as a great affront which Schmidt decided to try and take head on. According to him:

"The ideals and spirit of that original Amiga are alive and well today. But to limit Amiga to just one box, one product, one OS, is to keep Amiga from ever seeing its full potential. Think about it... The original Amiga never did really reach its full potential despite its technical advantages and its cost and ease of use advantages. Why? Because it never became ubiquitous. The company's early vision was probably too limited for the vast potential that Amiga offered. The original Amiga was all about multi-media, so why not have Amiga running on every type of device imaginable, on top of every other OS out there?

"If you think that Amiga was just a box, you've missed the point. Amiga is about a better way. We are continuing to focus our resources on setting software standards for the coming generation of Internet appliances. We are not planning to offer hardware devices, but will work with hardware manufacturers who want to license our technology. As far as offering next-generation Amiga systems, we are open to talking to companies who want to offer such a product. For those of you who are excited about the Amiga Operating Environment running on a wide variety of future Internet appliances, we invite you to track our progress and activities over the coming months. The Internet appliance software model that we are putting together will open up an exciting new era of software development that we think will be very interesting to the type of innovative thinkers who were drawn to the Amiga computer in years past."

Although the demise of the MCC might shock some people, here at *Amiga Format* we've been more excited by the prospect of a new classic Amiga in the next few months than a hypothetical shift to a new system. We'll keep you abreast of any further changes going on in the new-style Amiga company as soon as we know them, but prepare for further rocky revelations in the near future...

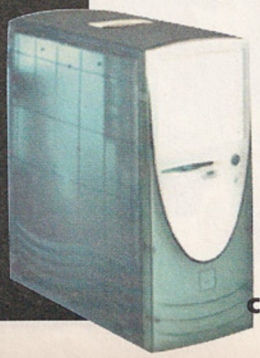


The MCC is no more, long live the MCC.

IWin you lose

Although we'd said that IWin was likely to be a hoax in the last issue, and people all through the Amiga market were pooh-poohing their claims, there has been no sign of their mythical Amiga-clone machines. As we write this, there is supposed to be a press conference covering details of the machines on Saturday October 2nd. However, no Amiga mags have been invited and no-one else at Future who works on PC titles, or for that matter any other computing titles has been invited.

The question remains though, why hoax us? What possible reason could a company have for wanting to perpetrate a hoax on this scale? We're trying to find out the story behind IWin's sudden appearance and we'll let you know as soon as we have more answers.



IWin even have a "roadmap" of their plans for the next five years. Does it mean anything?

Continued overleaf ➡

The G5 is coming

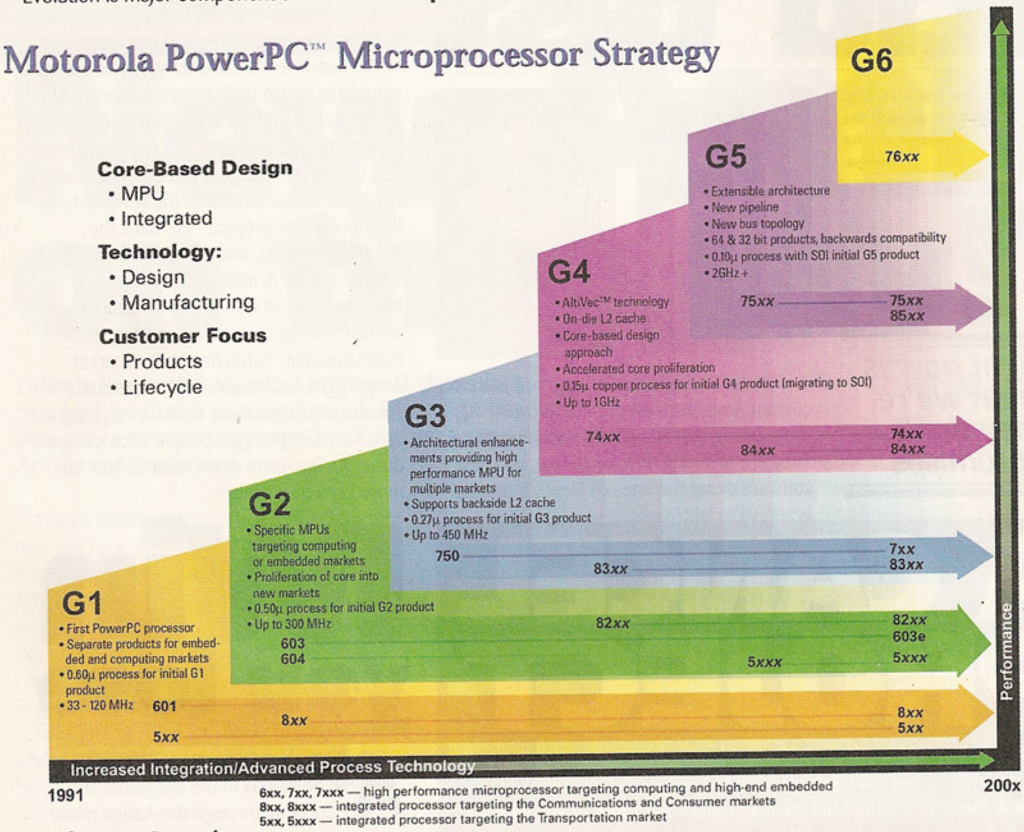
Motorola have just launched their new breed of PowerPC processors but are already talking about the next generation. Hot on the heels of the release of the PPC7400, the first of their G4 line, Motorola have released a roadmap detailing their future strategy.

This roadmap demonstrates Motorola's commitment to the PowerPC architecture and expands upon their current range of microprocessors and embedded units. Evolution is major component of their strategy in the guise of a proposed G5 and G6 series.

Motorola are confident about the technological progress of their PowerPC processor.

The G5 will be available in 32-bit and 64-bit versions and is pencilled to ship within two years at initial clock rates of 2GHz. Pundits believe the G5 could be a real Merced-killer. Merced is the codename for the first in Intel's IA-64 line, their 64-bit replacement for the Pentium. It achieves legacy compatibility, rather inefficiently, by emulating a 32-bit processor. The 64-bit G5, on the other hand, can run 32-bit applications natively. The smaller size and power consumption of the proposed G5 series also means it is more suited to the desktop than Merced.

Motorola are not resting on their laurels with the G4, either. G4 fabrication will move over to Motorola's SOI (Silicon-on-insulator) process, a technique which allows up to a 35% boost in processor speed. Clock rates for the G4 will be cranked up to 1GHz and embedded versions will be produced for the communications and consumer markets.



IT'S A GAME OF CHANCE

To go with your Amiga Boxer shorts, socks, sunglasses, pens and other assorted, officially licensed Amiga merchandise you can now add an official deck of cards. The front of the Cards show pictures of 13 different Amiga computers, with the Amiga logo on the backs. There are three different Joker designs and *AF* has no doubt that they'll help to while away the hours awaiting a new Amiga.

The price for a card set, packed in transparent case, amounts to the equivalent of 15DM. Any local dealer should be able to carry them as the game will be distributed worldwide by Grenville Trading Int.



Snap! I've got every one of them Amigas, I have.

100 issues ago

AF30 January 1992



We look at what was going on in the Amiga market 100 issues of *AF* ago…

- **Cover feature: Past, Present and Future - *Amiga Format* does its now-regular look back at 1991 and picks some of its favourites for 1992, as do a number of game developers.**
- **On the disks: Two disks with complete packages as a Chrissie pressie for readers. Sequencer One and Graphics Workshop, but you would have thought that *AF* would have shouted more about the fact that they had an exclusive add-on for *Lemmings* in the shape of the *Xmas Lemmings* demo.**
- **News: *AF* teams up with Commodore to offer in-the-box magazines for new A500+ owners, still worrying concerns about games lacking compatibility with WB2+, a small piece about the World of Commodore show, DCTV for CDTV, HAM-E and the GVP 40MHz A500HD8+ were announced.**
- **Prices: A brand new A500+ Cartoon Classics pack with *Lemmings, The Simpsons, Captain Planet* and *DPaint III* would set you back £369.99 from Special Reserve.**
- **Games reviewed included: It was a top issue for games reviews, with such classics as *Populous 2* (Electronic Arts) 95%, *Birds of Prey* (Electronic Arts) 88%, *Microprose Golf* (Microprose) 90%, *Microprose Formula One Grand Prix* (Microprose) 92%**
- **Serious products reviewed: *Spectracolor* for HAM-E (Oxxi) 90%, *ProWrite 3.2* (New Horizons) 84%, *Directory Opus* (INOVAtronics) 89%**
- **Notes: A huge issue and a Christmas crossword puzzle!**
- **Pages: 308**
- **Cost: £3.95**

Product News...Product News...Product News...Product

Spitfire v0.23 – a complete desktop for the Palm Pilot and derivatives has been released. It works with the Palm IIIx, and with most other Pilot versions, and allows you to synchronise between your pilot and your Amiga.

Virtual Grand Prix, from Epic – although the first version pressed was the wrong one, Epic are busy re-pressing as I write this and we'll have a review next issue.

OS3.5 still held back for final testing of all components, but should be available by the time you read this if not by the end of October 1999.

Photogenics 4.2 released – the new version incorporates tool tips, new paint-on modes, faster processing and tweaks to the interface. Look out for the updated review in next issue.

Andreas Kleinert has released new versions of his JPEG, PNG and TIFF datatypes that support PowerPC.

WarpSNES hits version 4.1 and is now based on the source from SNES9x 1.25. It includes PowerPC support and AHI-based audio.

A Java compiler called Jikes has been uploaded to Aminet just recently. We haven't had time to check it yet, but you can find it in dev/lang.

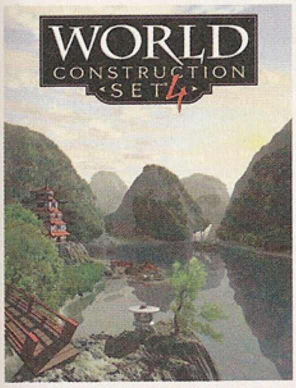
Product News...Product News...Product News...Product

Landscape your Amiga

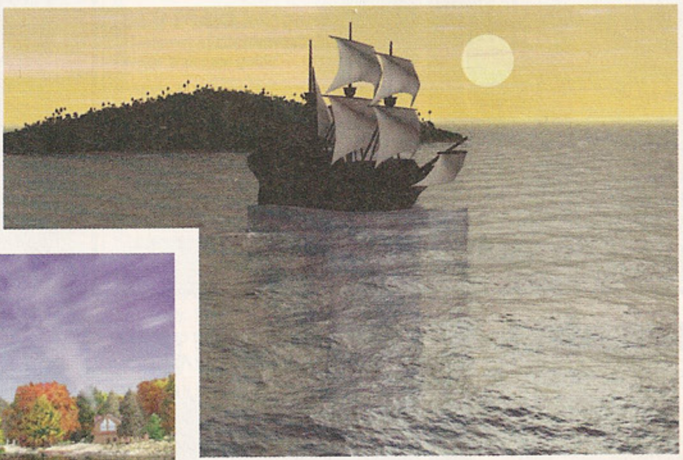


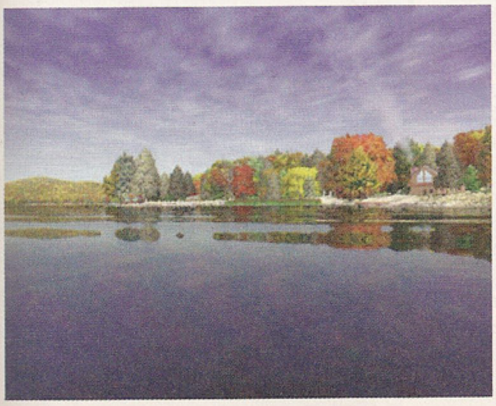
Although *World Construction Set* (WCS) was acclaimed by Amiga users far and wide for its impressive abilities it kind of disappeared from shelves never to return. But now, the once-named Questar Productions, who are now called 3DNature, have pledged to bring their latest version to the Amiga once more. Although we don't have many details on the new version and what it will entail for the Amiga version, you can see by some of the pictures here that the results that *WCS* produces are far more impressive than any other Amiga fractal landscape generator. In addition to the usual random landscapes, *WCS* can be used for GIS applications; whole earth imaging. It can also incorporate 3D models from Lightwave, including motion paths so you can animate and render an object in Lightwave and match it perfectly with a landscape rendered in *WCS*.

World Construction Set 4.5 for Amiga isn't ready yet, but you can find out more details by emailing amiga@3dnature.com, visiting their website at http://www.3dnature.com or phone Blittersoft on 01908 610170

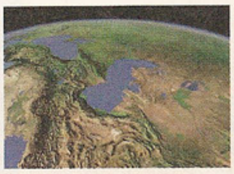


Doing a story on WCS provides a suitable excuse for very nice pictures on the news pages.









Vital Horgan



During the pre-Gateway limbo years there was no shortage of people willing to suggest that we, the Amiga community, should get together and make a bid to buy the platform and orchestrate its regeneration. I used to dismiss such ideas as well intentioned but hopelessly naive dreams.

Who were we to perform such a task? We're just a bunch of enthusiasts, small business people, software and hardware developers, journalists, artists, IT professionals, distributors, retailers and a few former PR-cum-marketing types. Hmm...

Now, in the wake of countless farcical changes of direction and personnel at the Gateway-owned Amiga, it doesn't seem such a bad idea after all. With that breadth of knowledge and experience, great things might just have been possible.

All this Digital Convergence stuff is fine, but while that's been at the heart of Amiga's strategy, I think it's also been at the heart of its problems. We know a computer is a computer, and we know what people want to do with a computer. More importantly, we know what people could do if they were given a decent system to work with.

Amiga, it seems, can't make up their mind whether a computer should be a computer, or whether it should be a TV, Internet terminal, washing machine, video recorder, hi-fi, burglar alarm, steam iron or a combination sandwich toaster and indoor barbecue. Or all of the above. Or just the bit that controls them all from little box in the cupboard under the stairs. So is it any wonder we seem to be going nowhere fast?

As the media and IT industries become evermore closely linked, they seem to be working themselves up into a frenzy of buzzwords, desperate not to miss any of the gravy trains that are now boarding on platforms one through to 255. Let's just hope Amiga don't end up missing them all. If they do we can always pass round a hat and when we've got a few billion quid, we can buy the company and do it properly ourselves.

Tony Horgan

Continued overleaf ➡

Freenet with Wirenet

Wirenet Amiga Internet is going to be offering free weekend access to the Internet from November. All subscribers will be able to log onto the Internet using a FreeCall 0800 number from midnight Friday until midnight Sunday, at no extra charge.

Removing the restriction of the "ticking clock" while online can completely change the way you use the Internet. You can check your email every half hour, or pop online to look at a single web page, without caring about adding another minimum call charge. Or you can spend half the day on IRC, chatting to your friends, without it costing a single penny.

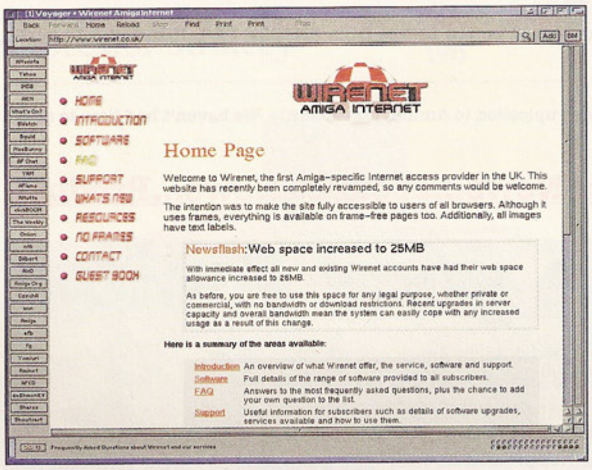
The 0800 access will be available to both modem and ISDN users, starting in November. Existing subscribers will have the opportunity to use the service from October. For anyone using the Internet for more than a few emails, this can present a tremendous saving. Most Internet users spend far more on phone calls than the cost of an ISP subscription. Now everyone will have the chance of flat-rate access, rather than paying for every minute spent online.

Wirenet was set up in 1996 to provide quality Internet access for Amiga users. They have teamed up with U-NET to provide the best possible quality of service and support. Wirenet's customer approach is that quality of service, reliability and value for money are far more important that simply offering the cheapest deal by cutting corners. The new 0800 service means that your subscription money will go further.

U-NET have invested heavily in a quality network, including a 155MB link to the USA, with two backup links, and multiple links to Europe. There is now plenty of spare capacity in the network, more than enough to cope with the increased usage that 0800 access will bring.

For more information, contact Wirenet on 01925 791716 or visit their web page at http://www.wire.net.uk

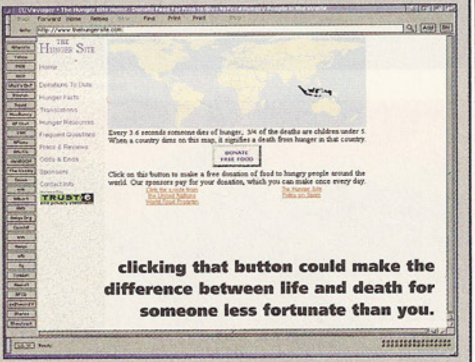
Wirenet fight back against the "free" ISPs by offering free dial-up at the weekends.



Hungry yet?

We've recently learnt of a website devoted to trying to stamp out world hunger. It's a Sisyphean task, but it's also a neat idea. All you need to do to participate is click on the "Donate free food" button. It doesn't cost you anything except the time taken to go to the site, and the people who run the site aren't keeping names or email addresses. Basically, the sponsors of the site (which change from day to day) promise to pay a minimal amount of money per click on the donation button. This equates to about .5¢ for each click per sponsoring company. The number of sponsors each day varies, but even at .5¢, that will still buy about a quarter cup of rice, wheat or corn. It may not sound like much, but the more people doing it the more food gets donated. Food is distributed by the United Nations World Food Program to more than 80 countries.

With people dying at a rate of one every 3.6 seconds because of hunger, or hunger-related diseases, and 75 per cent of them being children under the age of five, with less strength to fight illness, please click. You can only click once a day, but remember, it doesn't cost you anything, and it only takes a second to do. Visit the Hunger Site at http://www.thehungersite.com.



clicking that button could make the difference between life and death for someone less fortunate than you.

Amiga Book Bargains

Now you can buy any Amiga book from the Total, Insider and Mastering ranges for just £5.00 inclusive. This means a book like *Mastering AmigaDOS3 A-Z* (RRP £19.95) is just £5.00 including post and packing. The other £5.00 books are: *Total AmigaDOS, Total Workbench, Mastering Scripts, Mastering Programming Secrets, Mastering Printers, Mastering Beginners, A1200 Insider Guide, A1200 Next Steps* and *Assembler Insider Guide*. The one exception to the £5.00 price is *Total! Amiga Assembler* (RRP £24.99), which is just £7.50 inclusive. This is a strictly limited offer while stocks last. Orders will be dispatched within seven days. Payment by cheque only to Paragon Publishing: Amiga Books, F9 Moulton Park Business Centre, Redhouse Road, Northampton, NN3 1AQ, UK. Readers outside the UK can send for postage details via email: paragon@mcmail.com or by fax: +44 1604 497762.

Other news

AMD TO BUILD G4S?

Rumours have been circulating of a possible deal between Motorola and AMD that will result in AMD's new Dresden plant manufacturing Motorola's G4 chips. Currently Motorola cannot meet demand for their new processor and AMD, maker of the Pentium-beating Athlon, is in need of the cash. AMD and Mot signed an alliance last year in which they agreed to cross-license their technologies – so a deal is not out of the question.

NEW PDA ANNOUNCED

British palmtop manufacturer Psion Computing have announced its latest device, the Psion Series 7. The Series 7 features Symbian's EPOC32 operating system, a 133MHz StrongARM processor and 16MB of memory (expandable to 32MB). It is supplied with Internet connectivity, email, word processing, spreadsheet and address book software. The machine is scheduled to be on sale by the time you read this and will cost £699.95.

THE SECRET'S OUT

A patent newly issued to the Transmeta Corporation seems to support the rumours that the cloak-and-dagger Silicon Valley startup are indeed working on some kind of meta-CPU. Transmeta's code-morphing technology is a software translation layer which sits over the hardware morph host and permits the execution of programs consisting of any CPU's instruction set. The obvious target for such a technology is to build processors that are smaller, cheaper and faster than the Pentiums and Athlons and yet is capable of running x86 programs. It could also prove a neat solution for the Classic Amiga: full software compatibility at modern CPU speeds.

G4 EXPORT RESTRICTION

Apple say they are unable to export their new G4 Macs because of restrictive US export laws. People who live in 50 countries such as Russia, China, India, Israel and Pakistan are currently unable to buy one of Apple's desktop "supercomputers" because, according to Apple, the US Government classes these new machines as supercomputers and restricts their export for reasons of national security. In actual fact, these laws have recently relaxed. A more likely reason for the restriction is that until Motorola can ramp up protection of the G4 processor Apple cannot build enough machines to satisfy demand.

Subscription Order Form

Title ________ Initials ________ Surname ____________________

Address ____________________

____________________ Postcode ________ Country ________

Daytime telephone number ____________________

☐ Please start / ☐ Please extend my subscription at the rate ticked below

Please choose your method of payment

1. ☐ **Direct Debit** (UK only) **SAVE UP TO 44% ON 12 ISSUES 1,2,3 or 4**

(Full amount will be deducted in advance and in one lump sum.
Instructions cannot be sent via email, fax or photocopy.)

Instruction to your Bank or Building Society to pay Direct Debits.

Future Publishing — DIRECT Debit

Originator's Identification Number: 9 3 0 7 6 3

Future Publishing Ltd. Cary Court, Somerton. Somerset. TA11 6BR

Please send this form to address shown

1. Name and full postal address of your Bank or Building Society branch

To: The Manager

____________________ Bank/Building Society

Address ____________________

____________________ Postcode ________

2. Name(s) of account holder(s) ____________________

3. Branch sort code (from the top right-hand corner of your cheque) ☐☐☐☐☐☐

4. Bank or Building Society account number ☐☐☐☐☐☐☐☐

5. Instruction to your Bank or Building Society

Please pay Future Publishing Direct Debits from the account detailed on this Instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with Future Publishing and if so, details will be passed electronically to my bank or building society.

Signature(s) ____________________ Date ________

Ref No (Office use only) ____________________

Banks and Building Societies may not accept Direct Debit Instructions for some types of account.

AMIGA FORMAT

	6 issues DD & CD	12 issues DD & CD
☐ UK (Direct Debit)	£24.95	£39.95
☐ UK (Cheque/Credit Card)	£24.95	£39.95
☐ Europe (including Eire & N.America)*	£29.95	£49.95
☐ Rest of the World*	£34.95	£56.95

*AIRMAIL — Please indicate ☐ CD ☐ DD

2. ☐ **Cheque** (payable to Future Publishing Ltd. Sterling cheques drawn on a UK account.)

3. ☐ **Visa** ☐ **MasterCard**

4. ☐ **Switch** Issue No/Valid date ____________________

Card No ____________________ Expires ____________

Signature ____________________ Date ____________

UK readers: return this coupon to **AMIGA FORMAT** Magazine, Subscriptions, Future Publishing Ltd, **Freepost** BS4900, Somerton, Somerset, TA11 6BR.

Overseas readers: return (postage payable) to **AMIGA FORMAT** Magazine, Subscriptions, Future Publishing Ltd, Cary Court, Somerton, Somerset, UK, TA11 6TB.

☐ Please tick this box if you would prefer not to receive information on other offers.

Back Issues order here: Please enclose a separate payment for your back issues

Please can I have issue(s): ____________________ as shown on the Back Issues page.

Total amount enclosed £ ____________ (£1 postage in Europe, £2 for the rest of the world per issue).

Only available while stocks last!

ORDER HOTLINE 01458 271102

QUOTE ORDER No.AMFP130

AMIGA FORMAT Back issues

Missed AF? Don't miss out completely, order now while stocks last...



DISK CODE: AMF129

CD CODE: AFC045

Issue 129

Avoid the secondhand swindlers with our bona fide advice on buying an Amiga and discover the best new buys for your machine.

On the CD
AFCD45

Plenty of top transforming tools for Workbench, a guide to the Solar System and warrior adventures with *Alcandria.*

On the DD's
AN EASY LIFE

While *AmiMirror* copes with all your backup needs you can play with sound samples and *CyberClock.*

BLOWN AWAY

Blow up bricks in Legoland, blast away at *Age of Rock*, then blow your brains out with *Ultimate Quiz.*

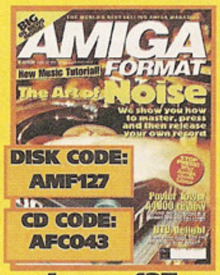


DISK CODE: AMF128

CD CODE: AFC044

Issue 128

Coverdisks Reminisce with WoA speeches, update PPaint and rule the Empire with Imperator.

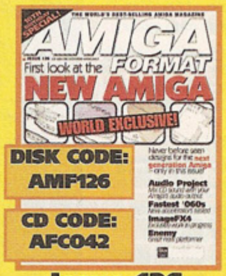


DISK CODE: AMF127

CD CODE: AFC043

Issue 127

Coverdisks Compress audio files with MPegENcGUI, plus details on free Internet access and fun with George.

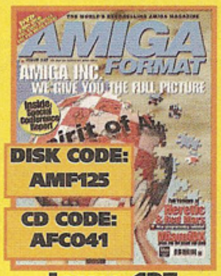


DISK CODE: AMF126

CD CODE: AFC042

Issue 126

Coverdisks Be stunned by the stars with Almanac II, link your Amiga to a laptop and play the new version of Descent.



DISK CODE: AMF125

CD CODE: AFC041

Issue 125

Coverdisks Design your own web page in a flash with our tools and spend more time playing the Evil's Doom demo.



DISK CODE: AMF124

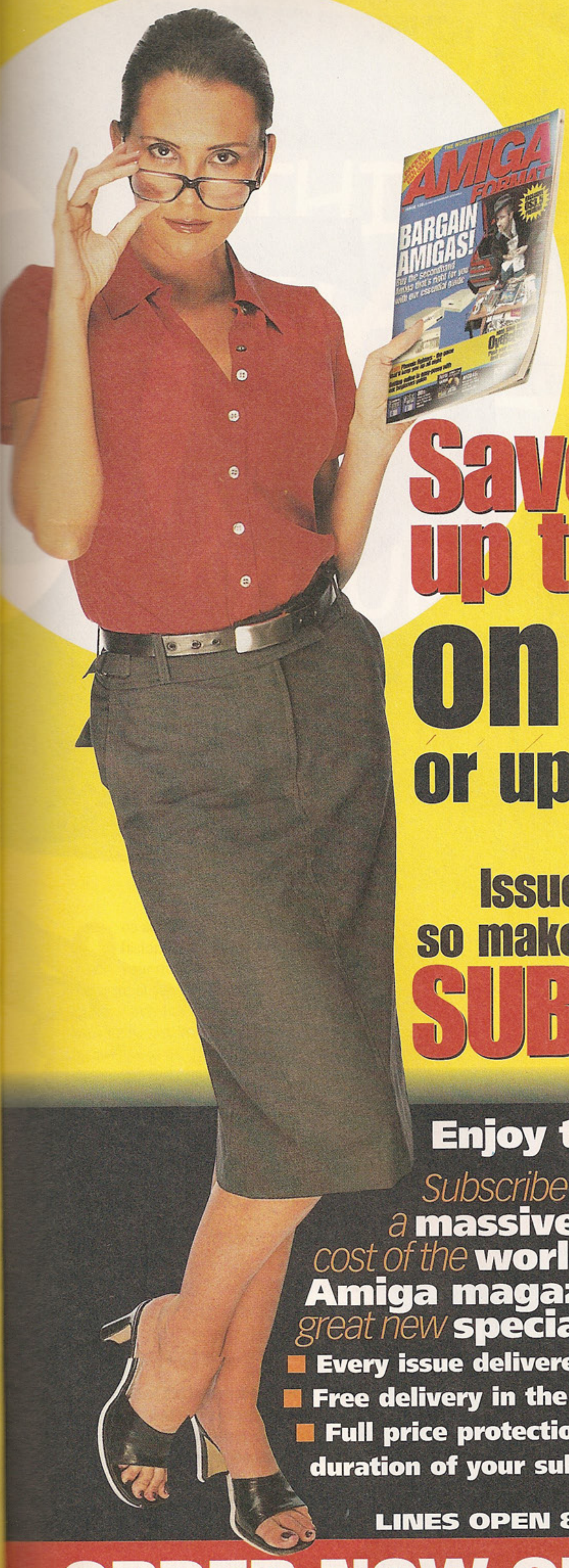
CD CODE: AFC040

Issue 124

Coverdisks Try out Linux on your PPC, listen to some top tunes and then it's games galore with dozens of challenges.

Treat yourself to a back issue of Amiga Format. It costs just £7 for a back issue complete with coverdisks or CD.

(European orders – add £1 per issue for postage.
Rest of the World – add £2 per issue for postage)



Just look at what you're missing out on...

Save up to 44% on 12 issues

or up to 31% on 6 Issues

UK only – other countries save more!

Issues sell out fast in the shops so make sure you never miss an issue

SUBSCRIBE TODAY

Enjoy the benefits of a subscription

Subscribe now and make a **massive** saving on the cost of the **world's best Amiga magazine** with our great new **special offers!**

- **Every issue delivered to your home.**
- **Free delivery in the UK.**
- **Full price protection for the duration of your subscription.**

How to Order

BY DIRECT DEBIT: Complete and return the form on the previous page. Please note that Direct Debit instructions cannot be accepted by email or fax.
BY CHEQUE OR CREDIT CARD: Complete and return the form on the previous page. Call the SUBSCRIBER HOTLINE on 01458 271102.*
FAX: The completed form on the previous page to 01225 822523.
EMAIL: subs@futurenet.co.uk*
WORLD WIDE WEB: http://www.amigaformat.co.uk*

LINES OPEN 8AM - 8PM, MONDAY - FRIDAY

ORDER NOW ON: +44 01458 271102

*IMPORTANT – PLEASE QUOTE ORDER NO. AMFP130



THINGS YOU SHOULD KNOW ABOUT YOUR AMIGA

Ben Vost and **Richard Drummond** reveal some facts about the Amiga that you really should know…

One advantage of having such a historically significant machine as your main computer is the fact that there are absolutely loads of snippets of info that may have slipped your personal knowledge net. We're here to put that right, by giving you 50 things that you really should know about your beloved machine. They aren't organised in any particular fashion, being more picked out of the late summer air and noted down as time went by, but we hope that there'll be enough that you didn't already know to surprise, entertain and inform you.

Amiga-spotting is a popular past-time for the die-hard enthusiast. It involves noting down every TV and film appearance made by an Amiga

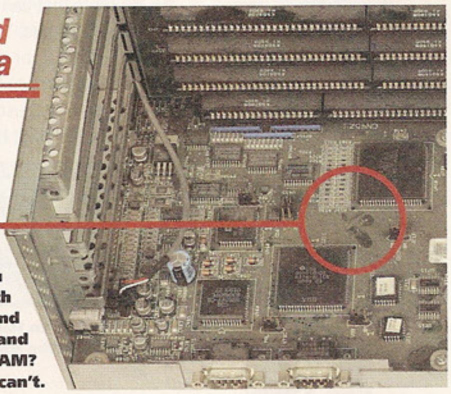
Some of the information should prove pretty useful to you as a permanent reference, and while we don't want you to mutilate your copies of *Amiga Format*, we're more than happy to point you towards our back issues department who will be able to send you another copy of the magazine, if you can't find one in the shops, for a very reasonable price. Simply turn to page 12 to find out the details.

The selection we've included is admittedly quite arbitrary, but only includes solid factual information that will be useful to you every single day of your Amiga use.



1 The A1000's case has the signatures of all the Amiga's designers in it – including Mitchy the dog!

2 The A4000's chip memory jumper that allows you to switch between 2 and 8MB chip RAM (it doesn't work before you get your hopes up) was termed the "free beer" jumper by Dave Haynie.



Wouldn't it be great if you could play with this jumper and get free beer and 8MB of chip RAM? Well, you can't.

3 The A4000, and AGA, were originally intended as upgrades for the A3000. You were going to be able to buy a replacement motherboard with AGA, Ethernet and a DSP, but still with SCSI and a hardware flicker fixer. Commodore got stuck in and made the A4000 the way it is today…

4 The original name for a system software failure on the Amiga was a Guru Meditation. The name comes from the early pre-Commodore days of Amiga development. As a smoke-screen for their real activities, the Amiga/HiTorro team pretended to be making joysticks and other game controllers. One of their designs was for a joyboard – a surfboard which could be used as a input device. When a software failure befell one of the gurus creating the OS, he had to sit on the joyboard and meditate.



5 AmigaOS will be largely unaffected by the Millennium Bug that is causing panic in the majority of the computing world. The AmigaOS timer.device measures system time as the number of seconds that have elapsed since January 1, 1978 – which it stores as a 32-bit number. This will overflow some time in 2114. Problems occur with some other AmigaOS components, however, since they treat this 32-bit number as signed. From January 19th, 2046, 03:14:07 the number of seconds elapsed will be negative and so the date will be invalid.

6 Sam Jordan, the creator of the WarpUp PowerPC kernel for the Amiga, is a bit of a Trekkie. One of WarpUp's housekeeping tasks is called Enterprise and another Voyager.



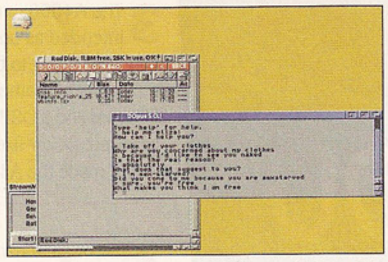
Jens Schönfeld joins Sam on the final frontier. To discuss Dilithium probably.

7 Amiga-spotting is a popular past-time for the die-hard Amiga enthusiast. It involves noting down every television and film appearance made by an Amiga computer. Amigas have popped up in *Red Dwarf, Inspector Morse, The Krypton Factor, The Net, Rolf's Cartoon Club, Sledgehammer* and *The Bill.*

8 Although by default ARexx is assigned to S: on a standard startup-sequence, one of the first changes you should make is to assign it to its own directory, saving your S: directory from getting clogged up.

Continued overleaf ➡

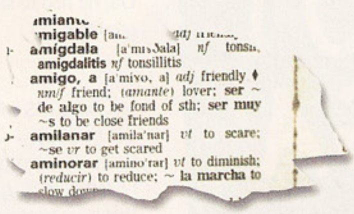
9 If you use *Directory Opus* as a Workbench replacement you can find a couple of hidden features there too. One is to open the About requester, hold down Shift then click on the animated logo repeatedly. The other is to make use of the Eliza program in the Opus shell by typing "Help me eliza!"



Problems at home? Can't afford a real psychiatrist? Then go to Eliza for help and general chit-chat about life's hassles.

10 The first replacement case for the Amiga – the A1500 from Checkmate Digital – was tested for strength in *Amiga Format* by standing on it.

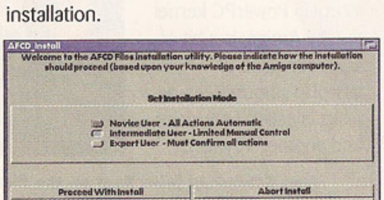
11 The word Amiga is not Spanish for girlfriend, that would be "novia". It just means "female friend". There, you see, you're not that sad, your girlfriend isn't made of silicon, plastic and metal...



¿por qué no te pones el vestido nuevo?

12 The names for the custom chipset originated out of a need for secrecy, much as the original name for the Amiga – Lorraine – did. It made it easy to talk about the work in a bar without giving the game away (although the conversations must have sounded pretty strange to outsiders).

13 Although the official Commodore Installer is the default used by programs for their installation, it has never been installed itself with a Workbench installation.



With the AFCD installer you can have as little or as much control as you want.

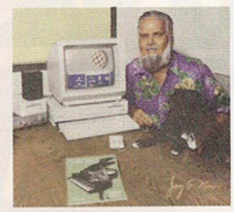
14 ARexx, the Amiga implementation of Rexx was written way back in 1987 by William S. Hawes. However, it didn't start to gain in popularity until it was bundled in free with Workbench 2. Nowadays, it's very rare to find a program that doesn't have some kind of ARexx port, making the Amiga the most interconnected machine out there.

15 Although it seems strange for Amiga to be including third-party software in OS3.5, most of the decent software included with Workbench versions from 1.2 was actually written by outside agencies and licensed by Commodore, including *ARexx*, *CrossDOS*, *Colorfonts* and *MicroEMACS*.



16 Work on the Amiga started back in 1982, and the original investors that came up with the cash to build the machine were three dentists.

17 Jay Miner – the "father of the Amiga" also designed the Atari 8-bit range and the Lynx for Atari.



Jay Miner – famous for his Hawaiian shirts and chip designs.

18 People inside the Disney Corporation, Lucasfilm, Virgin, Stena Sealink, the Barbican theatre, and even Microsoft are probably using their Amigas while you are reading this feature!

19 Once upon a time, what are now the two Amiga keys on your keyboard used to have a Commodore logo and the familiar Amiga "A" on them.

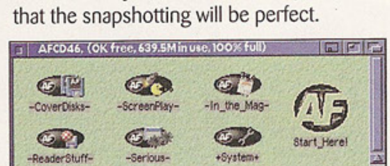


20 Don't format high density disks as double density (880KB) disks. They become far less reliable when you do that. If you don't have a high density drive, don't use high density disks!



21 It's not a good idea to run Workbench 3.1 on Kickstart 3.0 ROM chips. Although you might not get into trouble, this combination can cause problems with datatypes, graphics cards and ATAPI devices. You'll need Kickstart 3.1 for when you upgrade to Workbench 3.5 anyway.

22 Our CDs are snapshot using fonts that can be found on the CD every issue. We use FuturaB/12 for the screen font, and XHelvetica/11 for the icons. If you use these fonts you'll find that the snapshotting will be perfect.



If you want the CDs to look like this then make sure you use the same fonts.

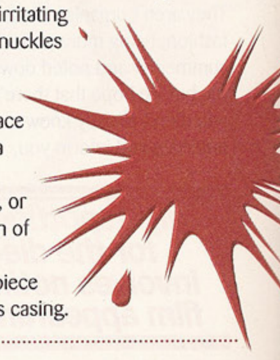
23 The more partitions you have on a hard disk, the more memory you lose when you boot your machine. A good compromise is to have three or four drives, one for Workbench, one for programs (and if you have another partition you can divide that into two – for instance work and games) and one for data, where you can keep all your pictures, sounds, and other files. This should also make it easier to back up your drive since you probably won't need to back up the work or games partitions too often – just concentrate on the ever-changing Workbench and Data partitions.

24 Keyboard shortcuts make life a lot easier. Most programs these days make use of RA-q to quit, but they are also likely to use the following:

RA-x .... Cut
(mainly text, but can be pictures or sound)
RA-c .... Copy
RA-v .... Paste
RA-p .... Print
RA-s .... Save
RA-o ..... Open (load a file)
RA-i ...... info (for icons)
RA-Shift-/ .... About
(brings up a program's "about" requester)

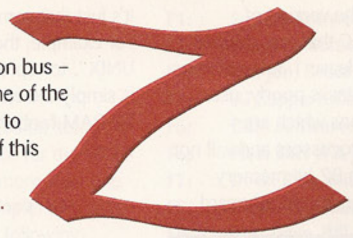
25 The ConClip function called in the startup-sequence allows you to copy text from the shell. You can also use *MCX* or *MCP*'s EditHook function to allow you to copy text from textfields, or requesters. A lot of MUI textfields also have this ability meaning that you have to do far less retyping of important text.

26 If you open up your Amiga, you must give a sacrifice to the Blood God! Without doing so you'll almost certainly find that your machine doesn't work properly when you put it back together again. The sacrifice usually takes the form of an irritating scrape of the knuckles across the cheese-grater-like surface of the back of a Zorro daughterboard, or the slicing open of the fingers on an unfinished piece of your Amiga's casing.



27 Possibly the least used command in AmigaDOS is *MagTape*. Its purpose is to control a tape drive for backups. The second least used command is probably *DiskChange*. Its intended use is to notify AmigaOS of when a new floppy is inserted into a 5.25" drive. Unlike conventional Amiga floppy drives these didn't support a hardware disk change line.

28 The name Zorro – which applies to the Amiga's proprietary expansion bus – is derived from the codename of the first A1000 prototype board to feature an implementation of this bus.



29 A tool called Disk Doctor was shipped with Workbench up to version 1.3 for repairing damaged disks. It relabelled disks that it resurrected as Lazarus. Disk Doctor wasn't any good at its job and was dropped with the advent of WB2.0.

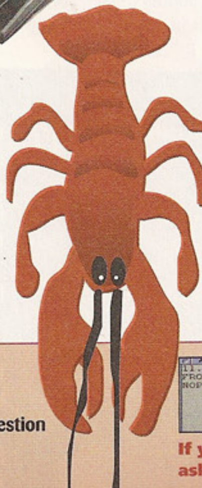


It might have cost a lot of money, but it was black and stylish and all your friends thought it was really cool.

30 CDTV, the first Amiga-based venture into the digital convergence market, doesn't stand for what you might think. It actually means Commodore Dynamic Total Vision.

31 One of the first designs for a next generation Amiga was Commodore's Hombre system based around a Hewlett-Packard HP-PA RISC processor.

32 The titles of various B52's songs are written on several of the Amiga models' motherboards. The A500 has the legend 'Rock Lobster', the A600 has 'Junebug' and the A1200 'Channel Z'.

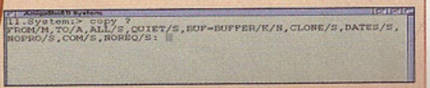


33 If you forget the syntax of a shell command, you can get a reminder by entering the command name followed by a question mark. For example, typing Copy ? will display

```
FROM/M,TO/A,ALL/S,QUIET/S,BUF=BUFFER/K/N,CLONE/S,DATES/S,NOPRO/S,COM/S,NOREQ/S
```

This is the argument template for the copy command, a comma-separated list of all its parameters. Each parameter may also have a modifier or modifiers specified to define its type.

MODIFIER	EXPLANATION
/S	Switch. This parameter is a boolean variable. If the option name is supplied, its value will be set, otherwise unset.
/K	Keyword. This option will not be used unless the keyword is supplied. For example, in the COPY command above the BUF option will only be filled if you type something like 'BUF=20'.
/N	Number. This parameter is a decimal number.
/T	Toggle. A boolean variable similar to a switch but, supplying this option causes its value to toggle.
/A	Required. This parameter must be supplied.
/F	Rest of line. The entire rest of the line will be taken for this parameter even if other keywords appear.
/M	Multiple strings. This argument will take any number of strings.



If you get lost in a shell don't forget you can ask for help.



34 The first thing that the Amiga does when you turn on the power is to perform a check on its hardware. If any of these tests fails, it will be signified by the screen changing to a particular colour.

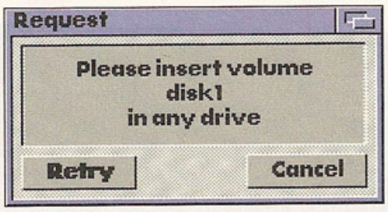
COLOUR	REASON
Red	An error was found in the ROM.
Green	An error was found in the Chip RAM.
Blue	An error was found in the custom chips.
Yellow	The CPU found an error before the error trapping software could be activated.



The keyboard processor also performs a self test. If this fails, the Caps Lock light will flash.

35 You don't actually need a mouse to control Workbench: the mouse controls can be simulated from the keyboard. Press and hold down the left Amiga key. Then pressing the cursors will move the pointer, left Alt will operate as the left mouse button, right Alt will operate as the right mouse button.

36 Do you ever get annoyed at being interrupted by a system requester while typing? You don't have to reach for the mouse: requesters can be replied to with keyboard shortcuts. LAmiga+V operates the leftmost button, LAmiga+B the rightmost.



Requesters tend to pop up just when you're in the middle of a... sorry, hang on.

37 The Amiga was intended to have a better DOS than it did. Due to financial problems the original project was dropped and the emergency backup plan used instead. AmigaDOS as we know it was created by the British company MetaComCo, writtten in BCPL (a forerunner of C) and based on their experimental TripOS. The inconsistencies between the BCPL interface of dos.library and the C interface of the rest of the OS has been in a thorn in the side of Amiga developers ever since.

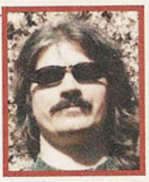
38 The Amiga's famous HAM screenmode was an experiment by Jay Miner after a seeing a flight simulator in action. The original specification for the Amiga chipset was for composite video output only. When Commodore agreed to have RGB output as well, Jay said there was no need for the HAM mode and wanted it removed from the final silicon. However, since removing it would have left a gaping hole in the chip or required a costly redesign, it stayed. The rest is history.

39 Where are they now?

JAY MINER
deceased.
CARL SASSENRATH
President, Rebol
RJ MICAL
Former VP, 3DO
DALE LUCK
Master Software Architect, 3DO
ANDY FINKEL
Met@box Infonet
DAVE HAYNIE
V.P. Technology, Met@box Infonet
MICHAEL SINZ
NextBus (produces information systems for public transport)







40 You do not actually need a scandoubler to display your Amiga's native video output on a VGA monitor, although you will probably require

Continued overleaf ➡

➡ a 23pin-15pin converter so that you can connect the VGA lead to your Amiga's RGB port. If the VGAOnly monitor driver is present in your DEVS:Monitors drawer then the Multiscan, DblPAL and DblNTSC modes get tweaked to VGA frequencies. Also, if you specify the Mode Promotion option in Workbench's IControl prefs, then AmigaOS will open DblPAL and DblNTSC modes when PAL and NTSC are requested, respectively. You will still have problems with OS-unfriendly software, particularly games.

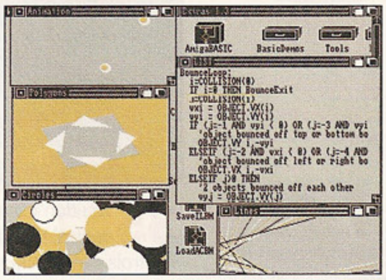


It's silver, shiny and lets you plug in lots of different monitors.

41 ARexx is one of the Amiga's most powerful features. It is a scripting language which can be used to communicate with application software, and even to transfer data between packages which otherwise would not be capable of co-operation. The *RexxMast* program, your Workbench's System drawer, must be run before any ARexx scripts can be executed. This is not performed by a default Workbench setup. To correct this, you can either drag *RexxMast* to your WBStartup drawer or add the following line to your user-startup file (located in the s directory of your boot disk) with a text editor.

```
Run >NIL: SYS:System/RexxMast
```

43 AmigaBASIC, the version of Microsoft BASIC that was shipped with AmigaOS up to release 1.3, is not very Amiga-friendly. It multitasks poorly, uses some 68000 instructions which are privileged on higher processors and will not work on machines with 32-bit memory such as A1200s with an accelerator card.



It's very basic – hence the name and should be avoided at all times.

If you've got double-jointed fingers and you manage to hit the right keys, there are many secret messages to be found within Workbench

44 The AmigaShell can be frustrating for those brought up on UNIX because at first sight it seems to lack some important features. This is not actually true, it's just that some features are well hidden. For example, the Amiga equivalent of the UNIX '.' to represent the current directory is simply the empty string, "". To copy the file RAM:foobar to the current directory, type:

```
Copy RAM:foobar ""
```

By default, the AmigaShell does not handle pipes very well. This can be improved with the Pipe command. However, it is not shipped with AmigaOS by default, but is available from the Aminet at util/cli/finkelshelltools.lha. You can then do things like

```
Pipe List | More
```

to display the contents of the current directory with More. This can be made even more UNIX-like with an undocumented feature of the AmigaShell. If you set the local variable _pchar, you can use pipes without explicitly calling the Pipe command: the shell expands things for you automatically. For example, if you set _pchar with

```
Set _pchar "|"
```

You can perform the above example more

42 Accented characters and how to get them (on a GB keymap and not all fonts have all these characters (and there are more) – your mileage may vary):

ALTERNATIVE KEYS	KEYBOARD	EXAMPLE
Accents		
Acute (aigu)	Alt+f then letter	é
Grave	Alt+g then letter	è
Circonflex	Alt+h then letter	ê
Tilde	Alt+j then letter	ñ
Diaresis (umlaut)	Alt+k then letter	ö
German hard s (esset)	Alt+s	ß
a with ring	alt+q	å
o with slash	alt+o	ø
Cap. o with slash	alt+shift+o	Ø
eth	alt+d	∂
Cap. eth	alt+shift+d	Đ
thorn	alt+t	þ
Cap. thorn	alt+shift+t	Þ
Cedilla c	alt+c	ç
Cap. Cedilla c	alt+shift+c	Ç
Spanish query mark	alt+shift+m	¿
Spanish exclamation mark	alt+i	¡
Diphthong	alt+a	æ
Cap. Diphthong	alt+shift+a	Æ
Typographic		
Copyright	alt+e	©
Registered trademark	alt+r	™
Bullet	alt+8	•
Paragraph	alt+p	¶
em dash	alt+n	–
section sign	alt+shift+s	§
Maths		
Superscript 1	alt+1	^{1}
Superscript 2	alt+2	^{2}
Superscript 3	alt+3	^{3}
quarter fraction	alt+5	¼
half fraction	alt+6	½
three-quarters fraction	alt+7	¾
Degree	Alt+w	°
Double angle bracket left (French: guillemet open)	alt+9	«
Double angle bracket right (French: guillemet close)	alt+9	»
micro (Greek: mu)	alt+u	µ
Plus/Minus	alt+z	±
Divide	alt+shift+x	÷
"Proper" multiplication sign	alt+x	×
logical not sign	alt+shift+z	¬
Currency		
Pound sterling sign	Alt+l	£
US dollar sign	shift+4	$
US cent	alt+4	¢
Japanese Yen sign	alt+shift+y	¥
Euro sign	alt+y	C



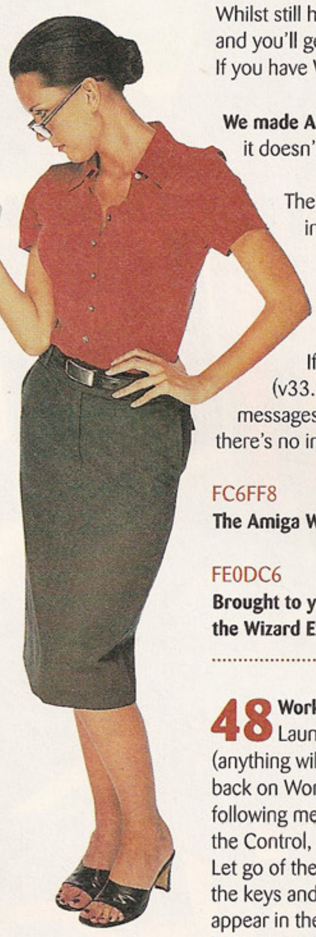
simply as:

```
List | More
```

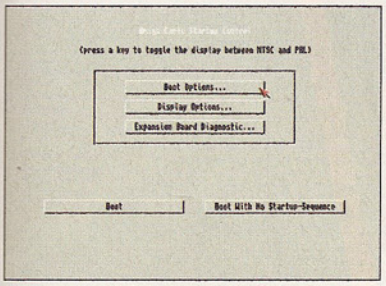
The variable `_mchar` can also be set to specify a command separator for the shell. This will allow you to enter more than one command per line. For example, setting `_mchar` to ";" will allow the following:

```
Join file1 file2 to file; Execute
file
```

45 It is possible to use hard disks greater than 4GB in size with the current AmigaOS, but care should be taken. This is because the majority of software, including the Fast File System itself, accesses disks via 32-bit arithmetic: the largest number than can be stored as a 32-bit number is equivalent to 4GB. Some programs even use signed arithmetic, meaning +/- 2GB are the limits. There are various possible solutions. Use a patched version of FFS or a replacement filesystem, such as PFS2. It is still a good idea to keep partition sizes smaller than 2GB and remember when formatting partitions that are located after the 4GB limit on the disk to perform a quick format only. All of these problems are fixed in the forthcoming update to AmigaOS, OS3.5. It will ship with new versions of FFS, Format and HDToolBox all capable of handling large capacity disks.



46 The Early Startup Screen was an invaluable addition to AmigaOS 3.0. This screen is accessed by holding down both mouse buttons while powering-up or resetting your machine. It provides controls to select the device you wish to boot from, disable any partitions or devices, turn off CPU caches and force the AGA chipset to emulate the earlier ECS or OCS versions. These last two are particularly useful when trying to get old software (particularly games) to work on expanded machines.



Where shall I boot from? Should I turn anything off? Decisions, decisions.

47 **Workbench 1.2/1.3 Messages**
These messages were included with Workbench/Kickstart 1.2. To see them, hold down both Alt and both Shift keys and press the following function keys. If you don't have enough time to see them (because you are recovering from

F1:	**System Software: Carl, Neil & Kodiak**
F2:	**Graphics Software: Dale, Bart, Jim & =RJ=**
F3:	**QA: Jon, Bruce, Stan, Kim & Jerry**
F4:	**LG Support: Caryn, Dave, Victor, Terry, Cheryl & Nancy**
F5:	**CBM software: Andy, Barry, Dave & Eric**
F6:	**Pics: Sheryl & Jack**
F7:	**Docs: Rick, Mitch, Peggy & Rob**
F8:	**Chips: Jay, Akio, Glenn, Edwin, Mark & Dave**
F9:	**HW: Dave, Bill, ChrisR & Josh**
F10:	**Moral Support: Joe Pillow & The Dancing Fools**

dislocating your fingers), then select "Last error" from the Workbench menu.
Now press both Alts, both Shifts, press any of the function keys and eject DF0: all at once and you'll see:

The Amiga, Born a Champion

Whilst still holding the keys, insert a disk and you'll get the following.
If you have WB 1.2 you'll see:

We made Amiga, They f*cked it up (actually it doesn't quite say that, but close)

The "return" message was changed in Workbench 1.3 to the following message:

Still a Champion

If you have Kickstart 1.2 (v33.180) you can find the following messages at the list locations, although there's no information on how to get to it:

FC6FF8
The Amiga Wizards bring this power to you.

FE0DC6
Brought to you by not a mere Wizard, but the Wizard Extraordinaire: Dale Luck

48 **Workbench 2.04 Messages**
Launch a program from Workbench (anything will do, I used Calculator), click back on Workbench, then select the following menu items while you hold down the Control, both Alts and both Shift keys. Let go of the right mouse button first, then the keys and the appropriate messages will appear in the menu bar. Again, you can use last message to see them again if they disappear too fast.
Clue: Control the alternate menus to shift into an enlightened state

Quit	**We made it...**
Backdrop	**Better than ever!**
Execute	**OS Group: Bryce, Michael, Peter, Darren, Randell**
Update	**GFX: Allan, Bart, Spence, Steve, Chris, Ray**
Redraw	**SP: Eric, Martin H., Bill, Martin T., Brian, Kevin**
Last message	**Other: Andy, Dale, Jimm, Kodiak, Ned, Porter, Carolyn, David, CATS, QA**
About	**Thanks to: Bill Hawes, Software Distillery**

49 **Workbench 3.0 Messages**
There are two ways of going about this. The first is to first make sure that you don't have more than 15 tasks running on Workbench (the easiest way is to boot without startup-sequence, load setpatch, assign env: to envarc: and type loadwb – as long as you don't have anything in WBStartup. If you do rename the drawer before you start). Then hold down both Alts, both Shifts and the Control key and start opening About requesters. Don't close them, but keep opening new ones and the fifteenth one you open should have the secret message.

Now, you can find the hidden messages by taking the harder route, but it's much easier to simply install *MultiCX* (or *MCP*, but *MCX* is easier to install just for this. It can be found on all our CDs in the +System+/Tools/WB drawer) so that it replaces the default About requester with its own. Clicking on the more button will show you the secret requester.

Clue 1: Control is given to those who are shifted four from the start and do not give up on the alternate course.

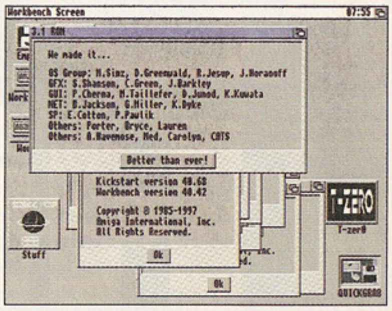
Clue 2: When it is about time to learn the secrets of the master, one must also qualify for the enlightenment.

We made it... OS Group: M.Sinz, P.Cherna, D.Greenwald, R.Jesup GFX: S.Shanson, C.Green, B.Whitebook, A.Havemose SP: E.Cotton, M.Taillefer, D.Junod, P.Pawlik, K.Kuwata Net: B.Jackson, G.Miller, K.Dyke Others: Bryce, Jimm, Duck, Kodiak, Porter, Lauren Others: Andy, Carolyn, Steve, Ned, CATS, SA

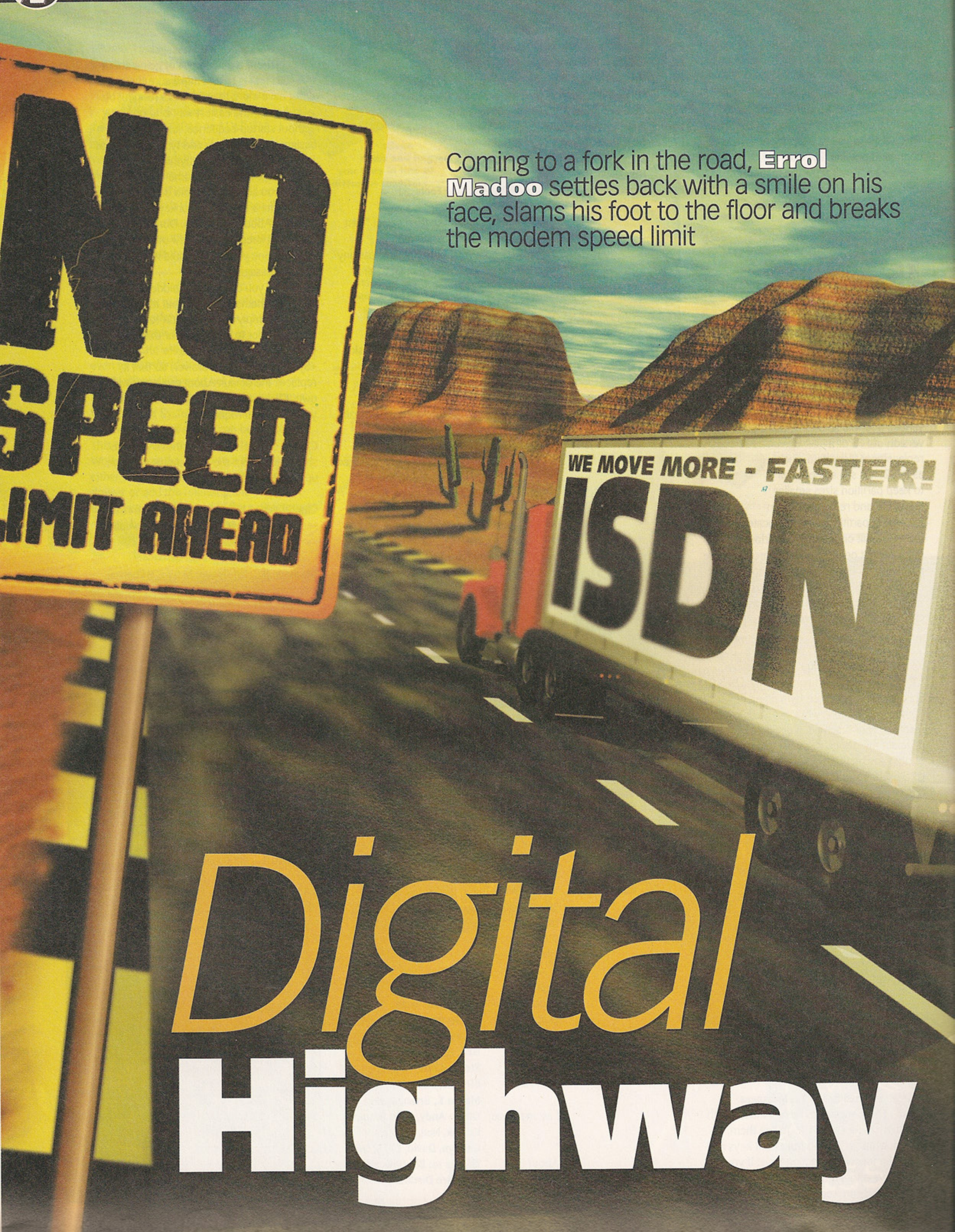
50 **Workbench 3.1 Messages**
The same applies. Use *MCX* or *MCP* to get to the message.

Although the method was the same for OS3.1, the message was slightly changed to reflect the different people who had a hand in 3.1 development.

We made it... OS Group: M.Sinz, D.Greenwald, R.Jesup, J. Horanoff GFX: S.Shanson, C.Green, J. Barkley GUI: P. Cherna, M. Taillefer, D. Junod, K. Kuwata NET: B.Jackson, G.Miller, K.Dyke SP: E.Cotton, P.Pawlik Others: Porter, Bryce, Lauren Others: A Havemose, Ned, Carolyn, CATS



The Workbench 3+ messages are easier to find if you use MCX or MCP.



Coming to a fork in the road, **Errol Madoo** settles back with a smile on his face, slams his foot to the floor and breaks the modem speed limit

Digital **Highway**



Don't be tempted by BT's Speedway terminal adaptor, it looks great but won't work with your Amiga.

As the compiler of the *AFCD*, I am forced to spend a great deal of time online. Despite trying to be as sensible as possible and restricting big downloads to evenings and weekends I still found that I was paying an average of £210 a quarter on phone calls and line rentals. There are several ways to reduce these costs and after a great deal of research I found that installing ISDN was the way to go for me.

The modem was a breakthrough in computer communications, allowing computers to converse with each other by converting their digital information into analog signals that can travel through public phone networks. Most people are unaware that there's an upper limit to the amount of information that an analog telephone line can hold and currently this limit is 5,600 cps, which is why commonly available modems are restricted to this speed. To further hinder the modem's efficiency, its speed is also governed by, and limited by, the actual quality of the analog phone line connections between it and the modem it's connecting to, so real-world transfer speeds average only 4,500 cps.

Connect to your ISP, pull your emails, download a 150K file and log off again in less time than it would usually take just to log on

Integrated Services Digital Network, or ISDN for short, is a system of digital phone connections that allows multiple digital channels to be operated simultaneously through the same regular phone wiring used for analog lines. Therefore, the same physical wiring can be used, but a digital signal, instead of an analog signal, is transmitted along the line. In addition, the latency, or the amount of time it takes for a communication to begin on an ISDN line is typically less than half that of an analog line. This basically means that you can connect to your ISP, pull your emails, download a 150K file and log off again in less time than it would take you just to log on with a standard 56K modem.

Until recently the cost of having ISDN installed and the subsequent running costs was prohibitive to all but high-powered business users. British Telecom, possibly influenced by the impending launch of both cable and ADSL high speed services, introduced their Home and Business Highway ISDN services late last year. For the first time, ISDN was brought into the reach of us common folks. Initially, neither of the Highway services proved to be very popular and as a result heavy discounts were introduced earlier this year. Now, if you spend around £15 a month on phone calls, with the discount Highway schemes in force, there's very little difference between the price of a normal phone line and ISDN Highway's line rental.

ARE YOU READY TO ORDER YET?

Once you have decided which Highway service you want all you need to do is give BT a call to place your order. They'll do a quick check while you are on the phone to see if your current line is compatible and if that passes you'll receive an order number. You'll then need to wait three to four days while BT do a complete system and exchange test survey and if this goes well they'll call you back to arrange an installation date.

Instead of tapping your fingers, this waiting period is an ideal time to arrange the purchase of your ISDN terminal adaptor, or TA for short, which is the modem-like device that connects between your Amiga and the digital socket of the Highway linebox. You should also check that your Amiga's serial port is up to the job and capable of at least 115,200 baud.

The engineer should arrive at the appointed time with your new Highway linebox underarm. An average installation should take only 20 minutes plus a further 20 minutes to set everything in motion in your local exchange. Your new Highway linebox has not one, but four sockets and these break down as two analogue phone lines (each with their own numbers) and two digital data lines (with a combined number for both). Rather than explaining all

Continued overleaf ⇒



HOME OR BUSINESS HIGHWAY?

In principle both the Home Highway and Business Highway are the same thing with the only apparent difference being the ongoing monthly/quarterly costs.

COSTS	Home	Business
Line conversion	£50.00	£57.58
New connection	£175.08	£175.08
Quarterly line rental	£120.00	£157.16
Quarterly call allowance	£45.00	£67.56

Note:

1. Home Highway is charged on a monthly basis but for simplicity I have quoted its prices on a quarterly basis.
2. The built-in call allowance for both Highways, excludes various type of calls including: calls to the BT operator, fixed-to-mobile calls, Select Services, Information Services, Directory Enquiry calls, calls to non-geographic national numbers (eg 0990) and calls to BT Click+ (not BT Click Free).
3. The unused call allowance cannot be carried over to the next billing period.

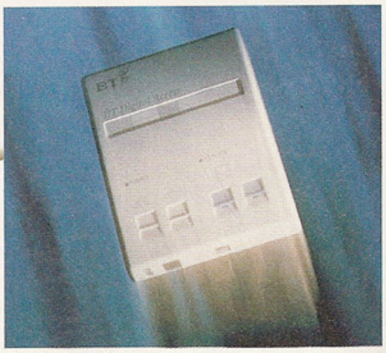
At the time of writing, these prices were only valid until 31st October 1999 but will probably be continued for a longer period. Please confirm pricing with BT beforehand, if you decide to get Highway installed. One additional point to mention is that BT Business (Business Highway) customers should get priority service when things go wrong.



the options available with Highway, take a look at the diagram and you'll soon realise the sort of flexibility that Highway offers.

SOCKET TO ME

Once you have the Highway linebox fitted, it's time to get to work setting things up. Firstly, plug your phone into one of the white sockets (labelled 1 and 2). Socket one is normally your primary number and the second socket is your secondary (new) number and you can plug either a phone, fax or even a modem into it. Next comes



This little box of tricks doesn't cost the earth but, on average, will double the speed of your Internet connections.

the TA hookup and in terms of connections it is the same as a modem so connecting shouldn't pose much of a problem. The RJ45 cable, which looks similar to a modem cable but has the clip on the bottom instead of the side, needs to be run from the TA to one of the blue sockets on your Highway linebox. Next comes the serial hookup (you did switch your Amiga off didn't you?) plug one end of the cable into the TA and the other end into your Amiga's serial port.

Lastly, you'll need to connect the TA to its power supply. Double check your connections, just to make sure and power up your Amiga.

Much of the TCP/IP stack software (the software you use to connect to the Internet) on the Amiga should be similar in its operation and settings so explaining the settings for each individual stack is pointless. Since most of you will probably already have your Amigas set up to use a modem, setting up the ISDN TA to work with your Amiga shouldn't really involve anything other than changing a few items in your TCP/IP stack software. Probably the most important setting that needs attention is the "Init String" setting which is found in the modem settings window. Although simpler init strings could be used, I found that the "AT&F&K3&C1&D0\r" string worked best for me with the MagicXpress.

Other settings that may warrant some attention are the serial speed settings, which should be set to 230,400 baud (if supported by your serial port) and the number you dial to connect to your ISP. Your ISP will probably have a different number for ISDN connections.

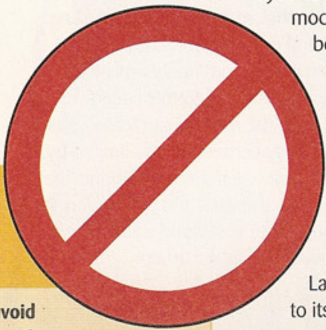
Once everything is set up correctly, it's time to try connecting to your ISP. If all goes to plan, you'll notice big changes straight away. Firstly, the TA connects to your ISP silently, which took me a little off-balance as I was used to hearing dial tones and a series of squeaks and squawks. The next change you'll notice is that it takes less than 10 seconds to connect and verify your ISP's DNS servers. After connecting the only real change that you'll notice is speed, and boy does it fly!

I headed straight for Future's server and downloaded a 11.5MB file in less than 24 minutes, averaging 6,750 cps and in less than half the time it would have taken with my old 56K modem. I then headed for the web and spent quite a while surfing with my newly acquired speed – webpages seemed to load as if stored on hard disk and the whole experience was very enjoyable. Now, with more than a month of ISDN use I m not saying that 64K ISDN connections are the fastest available but on average I have found ISDN to be quick, reliable and at least twice as fast as the connections I got with my old 56K modem.

CHECK WITH WHOEVER PAYS THE BILL FIRST

Before having Highway installed, I had to make sure that it would be cost effective. My two existing business phone lines were costing around £40 each per quarter and the combined phone bills averaged £130, bringing their total cost to around £210. The quarterly charge for Business Highway is £157.16 (including the £67.56 call allowance) so it doesn't take much to figure out that ISDN isn't costing me any more. Home Highway is billed slightly differently, in that it is charged monthly, so for £40 a month you get an additional phone line along with the digital lines and a £15 call allowance which effectively reduces its cost

PROBLEMS, PITFALLS AND MORE SPEED



Here's a quick guide that should help you avoid all the problems and pitfalls that i encountered.

1 Make sure that you purchase an ISDN TA that is known to work correctly with the Amiga. Looks and price aren't everything and perhaps it's worth spending a little extra money if it will save you a lot of grief.

2 Is your serial port up to the job? The standard Amiga serial port or the Multiface 2 card's serial ports aren't fast enough for ISDN transfers. If you have a third party serial board or card installed in your Amiga you must make sure that it is capable of, at the very least, 115,200 baud. If it isn't, it's time to buy more serial power. There are several available and Active Technologies, Eyetech or Power Computing should be able to assist you.

3 I'd advise you not to be tempted, as I was, to buy the cool-looking BT Speedway TA because it uses CAPI2 application-to-hardware protocols and there is no support, or need, for these protocols on the Amiga since most of what CAPI does is already built into the Amiga ROM. Simply put, your Amiga will not talk to the Speedway TA and had I known this in advance I could have saved myself an awful lot of frustration and hair pulling.

4 Depending on the TA you buy and the sockets on your serial card, you may need either an adaptor or conversion cable in order to connect the TA to your serial port. Serial ports can have either 9-pin or 25-pin connections and these could be either male or female. Check before you buy to avoid any last minute problems.

5 Both the BT Highway and most TAs also support what is called Dual Bonding which, in its simplest terms, is a method of combining both of Highway's 64K lines into one 128K line. Currently neither *Miami* or *Genesis* support Dual Bonding but it can be achieved by setting registers in your TA and forcing it to connect at 128K. If you have the MagicXpress you can try the "AT&FB42S53=1\r" Init string if you want to give it a try. Be warned though, dual bonded connections have to be supported by your ISP and they are charged at double the normal phone rate, which negates their appeal as far as I'm concerned. Sure they transfer at twice the speed but they will cost you twice as much, so unless you are in a blinding hurry, stick with 64K.

OPTION 1



Allows you to use a digital 64kbps ISDN line while still being able to use either a phone or fax machine at the same time.

OPTION 2



Allows you to use two separate computers, each with its own 64kbps ISDN connection to access the Internet.

OPTION 3



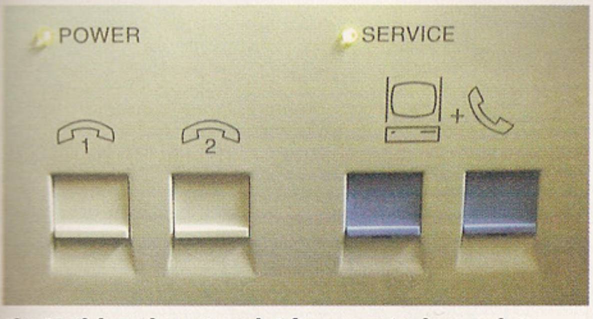
By combining both digital channels you can access the Internet or send data at a speed of 128kbps.

OPTION 4



You can either use two analogue lines for two phones or a phone and a fax machine together.

As you can see, BT Highway is very flexible



The BT Highway has not one but four separate phone sockets. Phones and faxes are plugged into sockets 1 and 2 and the terminal adaptor is plugged into one of the sockets with the blue covers.

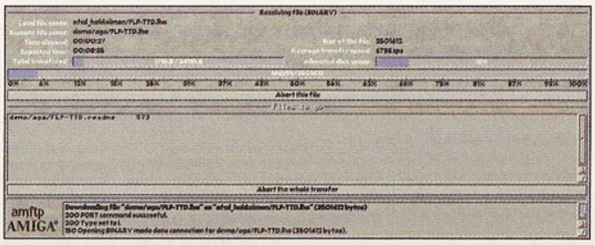
to £25 per month. For two phone lines and two digital lines that isn't bad, is it?

BT can bill you for all three telephone lines separately or can arrange to consolidate your bills together. If you would like to have Highway installed the separate numbers and billing could be used as a great argument with either your parents or other half. Yes folks, it is quite possible for you to have your own phone line and digital data line while not affecting the normal household telephone line at all and when it comes to bill paying time, it would be quite easy to see who had to pay what! You would of course have to agree on who got the £15 call allowance.

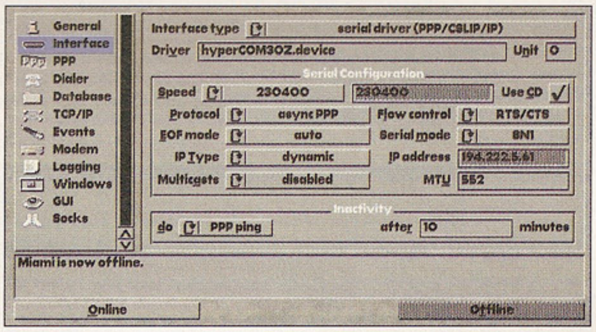
EUPHONY FOR LESS WITH THESE PEOPLE

Although this is by no means an exhaustive list of the potential savings available, it should give you a fair idea of the types of savings that are available to you. As already discussed, Highway doesn't exactly cost the earth and you'll be pleased to know that there are even more potential savings to be had. Euphony, for example are a telecommunications company that save you money by offering discounts over normal BT rates.

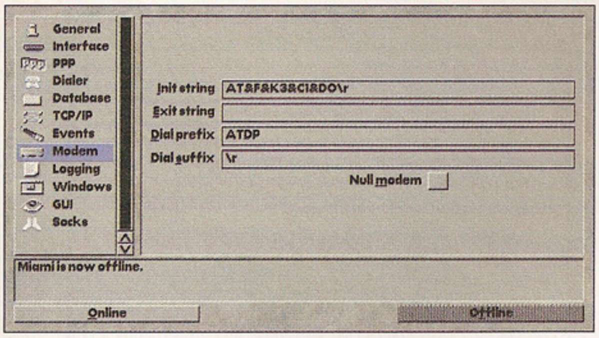
Once registered with Euphony, your billing is passed directly over to them and BT will only charge you the monthly line rental (but you will lose your call allowance) and you'll start saving money on all your phone calls. The big plus point with Euphony is that all evening and weekend local calls are free but they are limited to 10 minutes a call. After this, calls will continue but will be charged at normal (lower than BT) rates. Although this may not sound very enticing at first, remember that you are using ISDN, which can connect and reconnect almost instantly, so it's a relatively simple job to run an ARexx script while you are online to disconnect and reconnect the TA after nine minutes and 40 seconds giving you free calls. Neil Bothwick, of Wirenet fame, has already proved that this can be done successfully. The big snag with Euphony is that they allow you to have free evening and weekend LOCAL calls rather than LO-CALL calls so you will have to make sure that your particular ISP has a POP server local to you before signing up with Euphony.



A 6,788 cps sustained transfer rate from Aminet. As you can see this means that it'll only take eight minutes to download the 3.5MB file.



You will need to set the serial driver and unit numbers correctly in Miami's Interface window and don't forget the serial speed.



Getting the init string correct is critical to correct operation. This one works fine for me with the MagicXpress.

Another possible option to save you money on Internet calls is to sign up with an ISP that gives you free calls. BTInternet offers users free weekend calls via an 0800 number. Signing up with BTInternet will set you back £11.75 a month so you'll have to make sure that it would be cost effective for you. If you literally spend all weekend, every weekend online you could very well save lots of money.

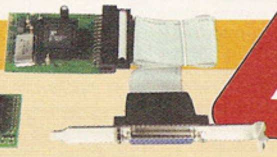
Screaming.net have hit the headlines recently because, not only are they a free ISP, but they also offer customers free unrestricted evening and weekend telephone calls. However, this is subject to you signing up with their sister company LocalTel – a company similar to Euphony that offer call discounts over standard BT rates. Sign up with LocalTel and Screaming.net at the same time and you'll have the luxury of free evening and weekend access to the Internet, free evening and weekend local phone calls and discounts on your national and international phone calls. So what's the snag? Well there isn't a really big one, only a couple of little ones. Firstly, you will lose your £15 Highway call allowance and secondly, if you have an established Internet account with a thriving website, it'll be a real pain to let everyone know that your ISP has changed.

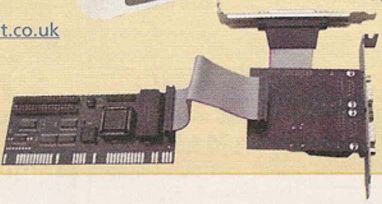
LOOKING FURTHER DOWN THE LINE

There are two forthcoming technologies that will be of great interest to Internet fans both offering very high transfer speeds. Asymmetric Digital Subscriber Line (ADSL) and cable modems are both sitting in the sidelines ready to show their faces but initially both of these services will only be available to a select few of us, possibly won't work with the Amiga and will more than likely involve the installation of separate dedicated phone lines. Although you may feel that it's worth waiting to see what happens, Highway is available now, offers transfer speeds around twice that of a 56K modem, works with your Amiga and, best of all, it doesn't cost the earth.



CONTACTS AND USEFUL INFORMATION



You can find reviews of both the MagicXpress TA and various serial port upgrades in the following locations:

- **MagicXpress review in *AF125* p55**
- **HyperCOM reviews in *AF128* p46**
- **IOBlix reviews in *AF121* p52**
- **MagicXpress ISDN T/A and HyperCOM I/O cards**

Active Technologies Tel: 01325 460116
sales@active-net.co.uk http://www.active-net.co.uk

- **IOBlix serial cards**

Eyetech Tel: 01642 713185
White Knight Technology Tel: 01920 822321
http://welcome.to/whiteknight/

- **BT Home and Business Highway BT Business Connections: (freephone) 0800 526586**
  http://www.homehighway.bt.com/index.htm
  http://www.businesshighway.bt.com/index.htm
- **Euphony** http://www.euphony.co.uk
- **Screaming.net and LocalTel** http://www.screaming.net
- **Wirenet Amiga Internet** http://www.wire.net.uk

Threw your old copies of AF out did you? Let that be a lesson to you because we've already reviewed all of this lovely stuff.

Peripherals & Storage

Award winning UMAX SCSI Flatbed Scanner



- **600 x 300dpi optical resolution, single-pass 24-bit A4 flatbed scanner**
- Comes with Photoscope (Amiga) and Mac software. Compatible with all modern SCSI interfaces - including PPC, Blizzard & Classic Squirrel (but not Surf-Squirrel)
- PCW 'Best Scanner of 1998' Award - July 1998; PCW 'Best Scanner' September 1998
- **Highly-acclaimed ArtEffect-SE v1.5 (normally £59.95) free with this bundle whilst stocks las t....**

lower prices

REMAINING STOCK of Amiga UMAX Scanner & PhotoScope/ArtEffect Bundle now just £149.95

The Top-Rated CD-Plus Range for the A1200

"Eyetech have come up with a real winner with this new CDROM drive" - Ben Vost, AF

If your A1200 hasn't got a CDROM then you don't know what you're missing!

At these prices there is really no excuse!





lower prices

- Whisper quiet 24 or 32-speed CDROM mechanism
- EZCD-XL 4-device buffered interface, 3-connector 40-way and 2-connector 44-way cables included
- CDPlus driver software specially written for Eyetech by the author of IDE-fix
- Optional Amiga and CDDA audio mixer with Gold phono audio jacks - just £14.95 each
- 20-watt CE-approved PSU complete with 13A plug.
- Optional upgrade to MiniTower or Desktop case with 230W PSU (which can also hold extra drives and power your Amiga) just £20 extra!
- **2 Free CDs whilst stocks last**

Complete CDPlus Systems: 24-speed just £74.95; 32-speed just £84.95

Bare mechanisms for Towers: 24-speed just £34.95; 32-speed just £44.95!

EZReWriter CDROM Burners

Make your own music and data CD's, back up data for less than 0.15p/MB .

lower prices



- Both are IDE/ATAPI reader/writer units with MakeCD Amiga writing software
- EZWriter units cut 'Gold' CD blanks at 2x speed & read CDROM's at 8 speed
- EZReWriter units cut 'Gold' CD blanks and CD rewritable disks at 2x speed and read conventional CD's at 6x speed
- Gold 650MB CD blanks (for use with either model) are available at ten for £10 at time of purchase
- CD rewritable disks are just £5 each when bought with the EZReWriter



EZWriter Internal

EZReWriter Options

EZReWriter-Bare	for A4000 or A1200 Tower (bare drive - no MakeCD)	£139.95
EZReWriter-INT	for A4000 or A1200 Tower (with MakeCD)	£179.95
EZReWriter-SE	External A1200 CD ReWriter with separate 100w PSU	£219.95
IDE interfaces	EZCD-SE I/F, 44-way & 40-way cables & CDROM s/w -	add £20
if required . . .	EZCD-Mk4 I/F, 44 & 40-way cables & EZ-IDE s/w -	add £30
	IDE-Flyer interface, cables & s/w -	add £50

A1200 TOWER & INSTANT DRIVES

- All drives come ready to use with WB3.0 pre-installed & WB2.x install script
- All drives over 200 MB come with over 45 top quality utilities (not shovelware) and MMe multimedia authoring s/w pre-installed, configured & ready-to-run

LS120 & Zip Drives (ATAPI i/f & EZIDE needed)

LS120 (HD Floppy/120MB Cart) - £79.95 3 x 120MB carts - £29.95
Zip Drive (Mac emul. compatible) - £79.95 3 x 100 MB carts - £29.95

TowerDrives (3.5" drives, 25mm high)

2.5GB - £89.95 3.2GB - £99.95 4.3GB - £109.95

17.2GB drive for EZPC system or IDE Flyer - £199.95

2.5" InstantDrives for the A600/A1200/SX32

20MB	Entry-level drive for the SX32/A600	£29.95
170MB	Entry-level drive for the SX32Pro/A1200	£49.95
260MB	Entry-level drive for the SX32Pro/A1200	£59.95
3.2GB	Ultraslim 9mm drive - A1200/600/SX32	£149.95
4.1GB	Ultraslim 9mm drive - A1200/600/SX32	£169.95



EYETECH GROUP LTD

The Old Bank, 12 West Green, Stokesley, North Yorkshire TS9 5BB, UK
Tel: 07000 4 AMIGA ~ 07000 4 26442 & +44(0)1642 713 185 Fax: 44(0)1642 713 634
Net: sales, info @eyetech.co.uk. www.eyetech.co.uk.

UK Bank/BS cheques, Visa*, Mastercard*, Switch, Delta, Connect, Solo, Electron. Postal/Money orders accepted. (*A 3% charge applies to all credit card orders). Due to space limitations some of the specs given are indicative only - please ring/write for further details. Please check prices, specification and availability before ordering. If ordering by post, please provide a daytime telephone number. Goods are not supplied on a trial basis. A1200 items are tested with a Rev 1.D.1 motherboard - other boards may need modification. Items subject to mechanical wear & tear (eg keyboards) are limited to 90 days warranty on those components. E.&O.E. All prices include VAT at 17.5%. Orders sent outside the EC do not incur VAT - divide the prices shown by 1.175 to arrive at ex-VAT prices. All goods are offered subject to availability and our standard terms & conditions, a copy of which are available upon request.

UK Next Day Insured Delivery Charges: Software/Cables, EZCD I/F = £3.00 2.5" Drives, Accelerators, Manuals = £7.00, 3.5" Drives, FDDs, PSUs, SX32 = £9.00, CDPlus, Minitower, Desktop = £11.00, EZTW & EZPC = £15.00. Worldwide in 2-7 days from receipt of faxed order & payment details.

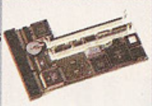
EYETECH

Accelerators & Interfaces

NEW

APOLLO Accelerators for the A1200

1230/40 TURBO PRO MK3



High performance 1 or 2 simm entry level accelerators for A1200 desktop consoles or tower systems

MMU, FPU & 1 SIMM socket to 32MB only **£59.95**
MMU, FPU & 2 SIMM sockets to 64MB only **£69.95**

A1240/28	'040/28MHz/MMU/FPU*	(21 MIPS)	£124.95
A1240/40SE	'040/40MHz/MMU/FPU*	(30 MIPS)	£167.95
A1240/40	'040/40MHz/MMU/FPU*	(30 MIPS)	£184.95
A1260/50	'060/50MHz/MMU/FPU*	(39 MIPS)	£264.95
A1260/66	'060/66MHz/MMU/FPU*	(51 MIPS)	£349.95
A1260/75LC	'060/75MHz/MMU*	(60 MIPS)	£249.95

TIP Buy your memory with the accelerator to ensure full compatibility

*To 32MB. Optional 2nd simm socket (tower only) offers 64MB total

The Apollo A1260/75LC is the fastest Operating System-supported Amiga accelerator currently available

20% off memory prices when bought with an Apollo or phase5 accelerator

Phase 5 G4 Accelerators

We will be carrying the full range of phase 5 G4 accelerators for the A1200 - and all accessories - including the unbelievable Cybervision Graphics Card - at unbeatable prices from the date of their first release. (Target availability (phase 5's statement says mid-October 1999, realistically (based on past experience) we would say Nov/Dec 1999).

Blizzard Vision PPC 8MB Graphics Card

Unbelievable quality and speed - 1600x1280@72HZ!
No Zorro slots needed!
NEW! 8mb card - £159.95 or just £139.95 with a PPC
The fastest, most highly specified graphics card you can buy for your A1200

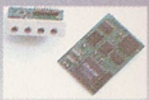
A1200 Clock Port Expansion Cards

For non-Zorro A1200s the best expansion route is via the (unused) clock port

PortJunior Mk2	1x 460kb serial port	39.95
IOBlix1200S	1x 1.5 MB/s serial port	49.95
IOBlix1200P	1x EPP parallel port	49.95
(Drivers for PC parallel port scanners, Zip drives etc., available shortly)		
PortPlus Mk2	2x460kb serial & 1x800kb parallel port	69.95
Catweasel-2	HD Amiga/PC floppy controller	49.95
ClockUp	4-way clock port expander	19.95

Prelude 16bit Hi-Fi Full Duplex Sound Card

"Easily the best A1200 sound card so far" - Tony Horgan, AF April 99



- Clockport fitting - no Zorro slots required
- Simultaneous recording, playback and mixing
- MIC, CD, AUX (Amiga audio) & line 3.5mm jack inputs. 3.5mm jack output to speakers.
- Mixes CD & Amiga audio etc., automatically on bootup without invoking application programs.
- Extensive software support including Samplitude, Octamed SS & AHI drivers & PPC-based MPG3 audio playback

Desktop: £129.95 Tower : £149.95 Zorro: £189.95

Parallel & Serial expansion for Zorro-based systems
IOBLIX expandable Z2 I/O card for Tower Systems 2xS, 1xP - £89.95

OS 3.5 UPGRADE ... OS 3.5 UPGRADE

OS 3.5 is on track for delivery in a few months time, so now is the time to start preparing your A1200 to be OS 3.5-ready. We will be shipping OS 3.5 (estimated price £34.95) from the date of its official release. Why not place an advanced order to ensure you get your copy at the earliest opportunity?

Amiga Inc recommend the following configurations:

For 'acceptable' performance:

'030 accelerator	ACC-030-40-1S	£59.95
Scandoubler/Flickerfixer	EZVGA range	from £48.95
Modem	MOD-56K 56K	£69.95

You will also need:

3.1 ROMs	SYS-KS31-ROM	£29.95
. . . or SYS-KS31-MPUG (w/3.1 disks and MP s/w)		£39.95

To take full advantage of OS 3.5:

'060 Accelerator	ACC-060-50	£267.95
16-bit sound card	ADPT-AUD-PL12-DT	£129.95
I/O Accelerator	INT-SER-PTJR	£39.95

The ideal way to update your Commodore A1200



3.1 Kickstart ROMs, Photogenics 1.2SE, 3.1 Workbench (6 disks), Personal Paint 6.4, Wordworth 4.1SE, Organiser 1.1, Turbocalc 3.5, Pinball Mania & Whizz, Datastore 1.1Workbench 3.1 manuals, Magic Pack Application s/w manuals . .all for just **£39.95!! (last few)**

MAGIC UPGRADE PACK

EZKey2

- Autodetects and remaps Amiga & PC keyboards
- Plugs directly into the ribbon cable slot on the A1200

EZKey2 alone - for A1200 only - just	**£28.95**
EZKey2 and Windows keyboard	**£38.95**
EZKey2, A4000 keyboard	**£58.95**

EZKeySE

- Separate models for Amiga & PC keyboards
- Amiga version & k/b detects all multi-key combinations

EZKey-SE/Amiga - for A1200 & A600 - just	**£18.95**
EZKey-SE/Amiga A4K keyboard	**£48.95**
EZKey-SE/PC - for A1200 & A600 - just	**£24.95**
EZKey-SE/PC and Windows keyboard	**£34.95**

The Eyetech Gold Collection

SIMPLY THE BEST SERIOUS SOFTWARE YOU CAN BUY FOR THE AMIGA!

A full catalogue/product listing will be sent to you FOC if you send a stamped addressed A4 envelope

Image FX4, Aladdin 4D Wildfire



Superlative graphics, animation and effects software for your Amiga from NOVA Design.

IMAGE FX4 - £149.95
IFX2⇨IFX4 u/g - £99.95
IFX3⇨IFX4 u/g - £74.95
Powerstation IFX Module - £74.95
ALADDIN 4D - £59.95 WILDFIRE - £99.95

Please state CDROM or Floppy disk

15% off with AF 128 voucher

Scala MM400



The best ever presentation and video editing software for the Amiga with extra backgrounds & fonts. Guaranteed to make MS PowerPoint users' jaws drop.

MM400 - £59.95 MM300⇨MM400u/g £39.95

UltraConv 4



The most comprehensive still image and animation conversion software available. Has over 130 built-in effects, batch conversion, QT AV builder w/audio, etc

UC4 - £39.95 UC4 bought with SQ4 £29.95

ScanQuix 4



The definitive Amiga scanner driver for most Epson HP, Artek, Mustek & Canon SCSI scanners & Epson parallel. Also ScanExpress 6000P via the IOBlix12P.

SQ4 - £59.95 SQ3⇨SQ4 u/g £29.95

PhotoScope



Software specially designed for the award-winning UMAX 610S, 1200S & 1220S SCSI 30-bit A4 flatbed scanners by the author of ScanQuix.

PHS- £59.95 PHS/ArtEfx/Umax Scner- £149.95

CamControl



Digital Camera serial interface control & download software for the Amiga for most popular Kodak, Fuji, Casio, Minolta, Mustek and Olympus digital cameras.

CamControl - £29.95

Samplitude



The definitive Amiga hard disk recording, sampling and FFT filtering package. Samplitude Opus allows virtual (non-destructive) projects of 16 tracks (4 in LE)

SampOpus - £149.95 SampOpus-LE - £49.95

Siamese RTG



The out-of-the-box Amiga-to-PC networking software which also allows you to use the PC's screen as a high res Amiga graphics card. 2.5 uses ethernet, 2.1 serial

SiSysRTG-2.1- £19.95 SiSysRTG-2.5- £89.95

MakeCD



The best CD-burning software for the Amiga, with extensive audio-CD support. For most SCSI & some ATAPI CDWriters/ReWriters. Bundled with EZWriter.

MCD3.x- TAO-Private - £38.95

Netconnect



The all-in-one internet package for the Amiga including 11 highly integrated programs covering all internet-related activities from email and Web to newsgroups.

NC2.x - £39.95 NC3.x & NET-ISP - £49.95

TurboPrint 7



The most comprehensive, fastest replacement system for your Amiga. Supports the latest printers from most main manufacturers. Colour correction, spooling etc

TB7.x - £38.95 TB6.x⇨TB7.x u/g £19.95

Workbench



Official Workbench disks for your Amiga. All packs include hard disk install software. WB3.1 & WB3.5 require 3.1 Kickstart ROMs (also available from us).

WB3.0 - £9.95 WB3.1 - £14.95 WB3.5 - £34.95(est)

EZ-IDE



The best replacement 4-device hard disk driver software available for a stock A1200/4000 which also supports ATAPI CDROM, CDWriters, LS120 & Zip drives.

EZIDE: £34.95 EZCD s/w⇨EZIDE u/g £14.95

WB2.x	WB3.x	Floppy disk
CDROM	PPC ready	AREXX enabled

Special bundle prices may apply - please ring
Upgrade/trade-in price available - please ring

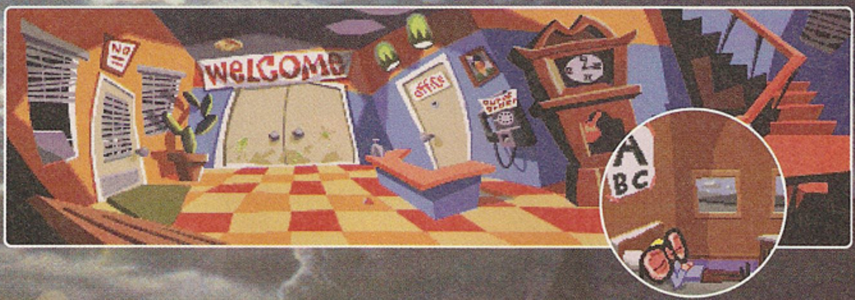
Due to variations in exchange rates the prices of some products may change - up or down - from the prices shown. Please ring or check our website [www.eyetech.co.uk/MAIN/APRICE.HTM] for the latest prices before ordering.

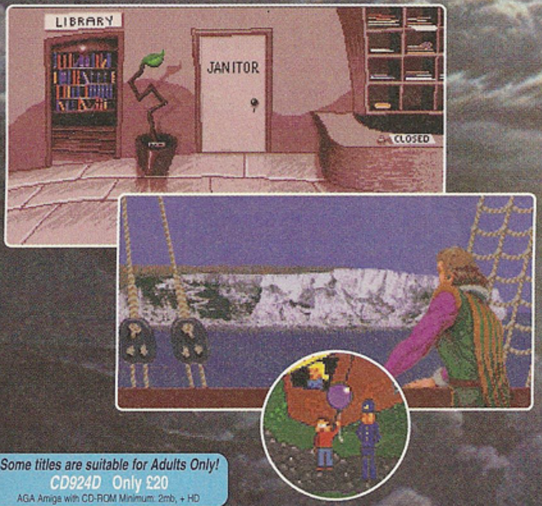


Adventurer's Lair

Adventure to uncharted lands, visit weird and wonderful places, meet strange and interesting people....

Join the Adventurer's Lair... *If you dare......*

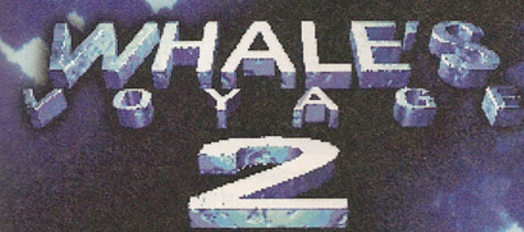




Features 10 full Graphic Adventure and RPG games: **Legend of the Elves, Federation:- *Space Adventure,* Blood Fest, 7 Realms, Lost On Parrot Island, Dungeon Hero, King Maker, Mad House, Total Species & Legends of Lothian.** Also features a huge database of solutions and walk-through's for hundreds of Amiga Adventure games.

Some titles are suitable for Adults Only!
CD924D Only £20
AGA Amiga with CD-ROM Minimum: 2mb, + HD

AMIGA cd-rom



A science fiction, role-playing, strategic trading adventure.

The story so far:
After many month's of political unrest, the skyboulevard, seat of government of the aphastra-system, has been destroyed by the crew of the Whale.

... 20 years later ...

... the crew is forced to stay alive in the corrupt world of the 25th century after spending their money on leisure and fun.

Whales Voyage 2 offers a lot of excitement which surpasses any other game in this style. From the beginning the player gets directly involved into the highly detailed story which evolves into a whole new and exciting way of game-play.



- *Full in-game Speech*
- *Stunning 3D textured graphics*
- *Complex Strategic gameplay*
- *Amazing cut sequences*
- *Professional audio tracks*
- *Rendered 3D "doom" style elements*



Whales Voyage 2 includes an abundance of high quality sound effects, music, stunning graphics and of course full in-game speech.

"Whales Voyage 2" will become one of the most complex games of the year, which combines role playing, trading simulation and strategic game-play.

Some titles are suitable for Adults Only!
CD946D Only £20
AGA Amiga with CD-ROM Minimum: 2mb, + HD or CD32

AMIGA cd-rom



Whales Voyage Part One Included FREE

Includes three main parts:
-The role-playing game, where a party of four people move through cities or large towns etc, in the whole galaxy.
-Part two is a complex trading simulation where the player is forced to make money to afford the equipment of the Whale and the crew.
-Finally the game contains strategic space-battles where the player has to fight against pirate ships and other enemies.

FREE POSTAGE WHEN YOU ORDER BOTH TITLES.*

epic marketing
Innovative and Original
www.epicmarketing.ltd.net
Ten Years with the Amiga!

08700 110013
Enquiries: 0 1793 514188 *Fax:* 0 1793 514187
Catalogue Requests: 0906 553 1900
Calls to this number should last around a minute and cost about £1.00

Open Mon - Fri
9:30am - 5:30pm
and Saturday Mornings

CREDIT CARD ORDERS WELCOME

Epic Marketing: BSS House - Area50, Cheney Manor, Swindon. SN2 2PJ, UK

POSTAGE
UK: £2.95 per order *(Software & Peripherals).* **Overseas:** £5 per order.
*Free postage in the UK when you order both titles together.

All items are sold subject to our normal terms and conditions and are subject to availability.
Both CD's should be available from stock as of 15th October 1999
Titles have been tested on A1200 based Amiga's. (extra ram & Hard drive may be required)
A full catalogue is sent with all orders.
When ordering please state product code, title and price.
Credit card orders are normally dispatched within 48 hours. E&OE All prices include VAT.
Cheques and Postal Orders should be made payable to ***EPIC Marketing.***
When paying by cheque add £3 for extra-speedy clearance.

Screen Play

There's been a couple of disappointments this month, what with *Starfighter* and *Turbo Racer 3D* being not nearly as good as the hype said they would be. What a shame, especially in the case of *Turbo Racer*, as the Amiga really does need a decent 3D racing game. Richard got the best game of the month to review, with *Foundation Directors Cut*, which I haven't played, but it looks simply gorgeous.

I'm hoping that in the next issue I'll have copies of *Putty Squad* and *Virtual GP* in for review, but I can't guarantee it. *Tales From Heaven* and *Whales Voyage 2* are nearly ready as well, but we'll just have to wait and see how long it takes before there are copies ready for release. It's great news for Amiga gamers that there are plenty of games on the way that look so promising.

SCREENPLAY INDEX

Previews

Ben Vost concentrates on Heretic II for this issue's previews section

Heretic II







(Above) Practice makes perfect and here you can hone your skills before you start. (Left) Gold – always believe in your soul.



Although it hasn't been long since we announced the impending port of Raven's *Heretic II* (*AF127*) to our favourite platform, it seems that the Hyperion team have been going great guns in their port of it. All the screenshots you see on this page are actual Amiga screenshots of the game running in 640x480 resolution on an 060-equipped Amiga.

I spoke with Hyperion's spokesperson Ben Hermans about the situation so far:

Memory consumption is a problem but we are confident that on an 060 equipped with a ViRGE or Voodoo card we will get a playable result



There's plenty of information for the programmers debugging H2.

AF: Those are actual Amiga screenshots? I'm impressed.

Yes, they are. Software renderer only mind you. The hardware renderer is still in the works and should prove quite spectacular.

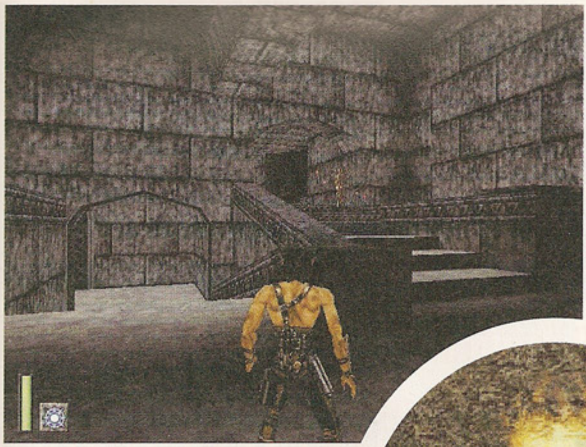
AF: How much memory does it need right now?

Our biggest problem is memory consumption. These things happily eat away more than 50MB if not more. We are targeting 32MB machines (we are talking PPC users here) but that still leaves us short a few tens of megabytes.

AF: How fast is it moving right now?

Only about 2-3fps but that's just the software renderer (which needs quite some optimisation) on an 68060. These figures are really irrelevant.

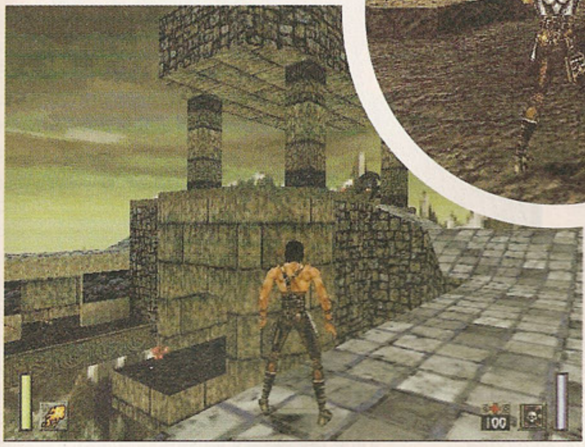
Basically, what we are trying to achieve is that an 060 with 3D acceleration (say ViRGE and definitely Voodoo 1 with the PIV) can run the thing in Low Res. At the moment, as I said, the game is running on the 060 in a purely unoptimised, software 3D version, but we are confident that on an 060 equipped with a ViRGE or Voodoo card we will get a playable result, possibly even in 640x480, and certainly in 320x200/240/256.

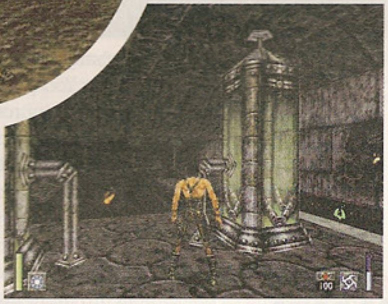


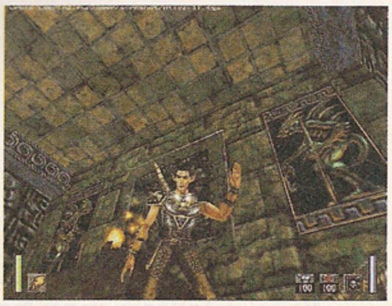
With such dramatic scenery and dazzling effects you can see why this game needs a lot of memory to run.



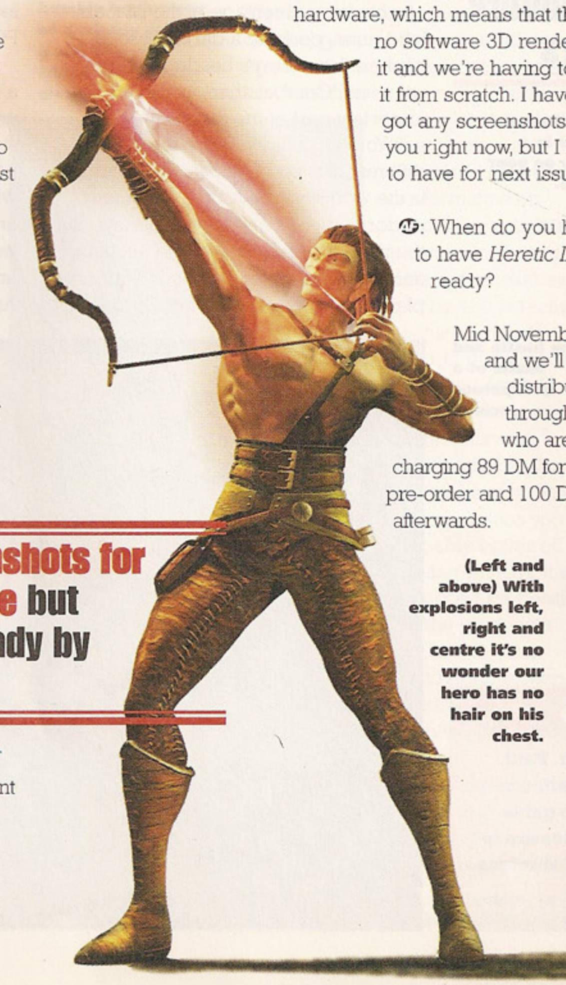








(Above left) Is it a teleport, the new Dr Who box or even a futuristic toilet? Who's to say. (Above right) The third person perspective allows for great camera angles.



A pure software renderer version is probably only playable on a low-end 604e and we have found that on a 604e at 180MHz the software renderer does 10 fps in 640x480 and 30+ frames in Low Res. All software renderer figures, heavily unoptimised. But it's too early to tell yet just how fast it will go, we are just concentrating on making things work right now.

AF: How are you going to convert the software-based 3D engine to a hardware-based solution?

Hans-Joerg Frieden is subsetting OpenGL into a MiniGL sitting on top of Warp3D so that even a lowly CyberVision3D would get decent results on a 060 or low-end PPC. With

There could be screenshots for Shogo by next issue but Herectic II will be ready by mid November

the Permedia 2 or Voodoo 1 it should happily run in 640x400 at a very decent on any PPC.

AF: What about *Shogo*?

That's a lot harder because it was only ever intended as a game for 3D hardware, which means that there's no software 3D renderer for it and we're having to build it from scratch. I haven't got any screenshots for you right now, but I hope to have for next issue.

AF: When do you hope to have *Heretic II* ready?

Mid November, and we'll distribute it through Titan, who are charging 89 DM for it pre-order and 100 DM afterwards. **AF**

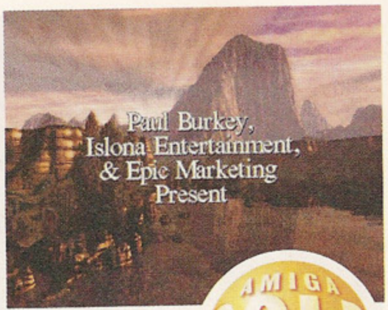




(Left and above) With explosions left, right and centre it's no wonder our hero has no hair on his chest.



Foundation The Director's Cut



Re-runs are not always a bad thing as Richard Drummond finds out

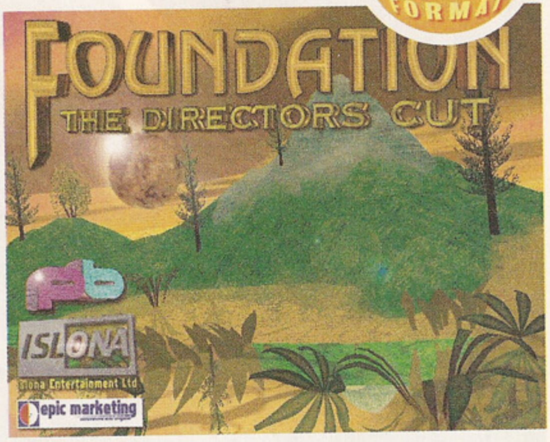
AMIGA FORMAT GOLD

Foundation was one of the big Amiga game releases of last year. It was initially published by Sadeness, but, alas, died a premature death with its publisher. Some sharp talking between Epic Marketing and Foundation author, Paul Burkey, at this year's World of Amiga show has fortunately led to its resurrection and re-release.

The original Foundation was reviewed in *AF113* and, perhaps rather harshly, received a score of 78%. In some ways this score was justified, because the game was incomplete at that time. Paul has released at least 20 free update patches for the game since then and these have corrected some of the defects of the original and added some new features. The Director's Cut is simply the original game combined with all the patches released at a budget price.



Dawn breaks on another fine day in Foundation World.



Your mission may be to seize control of part of the island, perform a daring rescue or capture the enemy's headquarters



Foundation can now run in a window on your desktop.

WHAT'S IT ALL ABOUT?

Foundation is a mission-based strategy game which owes much to the classic *The Settlers*. Each of the 40 missions puts you in charge of a new settlement. You must manage its resources – mine the raw materials necessary for building and grow enough food to keep your citizens happy. Some missions are that simple: you just have to develop your village. Others are more involved. The gameplay takes place on an island which, more often than not, you share with other tribes. The goal may be to seize control of a certain percentage of the island's land mass, perform a daring rescue, capture the enemy's headquarters or whatever. Combat, then, is also an important part of the game.

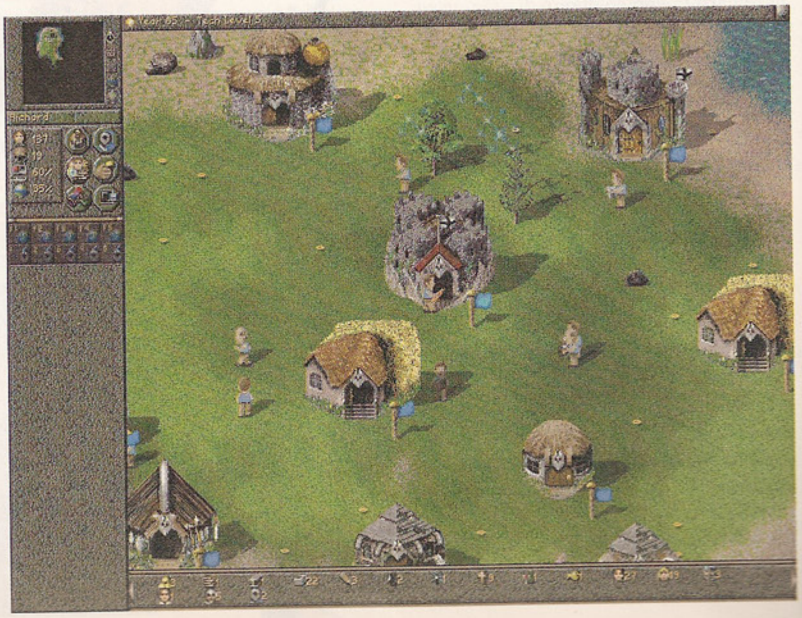
Your population is made up of different classes of citizen. The peasant is the workhorse of your society; they perform all the mining of resources, all the manufacturing and all the fetching and carrying. Other people in your town play more specialised roles. Guards and knights are there to defend you from attack and to wage war on your enemies. Scientists develop your technology. Wizards wield magic, a force necessary for erecting and dismantling buildings. And last but not least, the function of maidens in the non-PC world is the begetting of children.

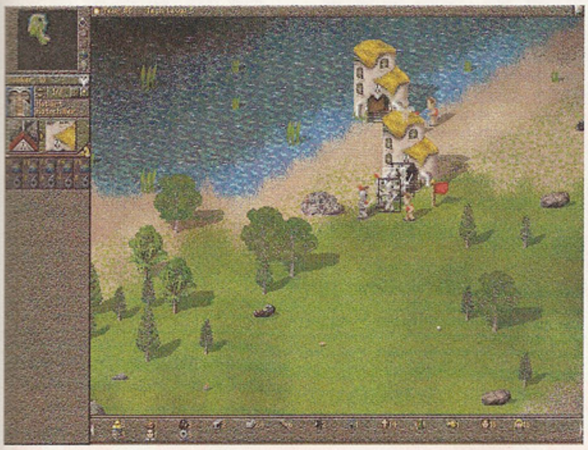
Each building in your settlement has a different function. Your headquarters is used as a base of operations and for storage. The barracks is for training peasants into guards, scientists and wizards. The mine produces coal, ore and stone; the forester's hut produces wood. Food is grown at the farmhouse and water comes from the pumphouse. As your technology progress you are

THE SAGA CONTINUES

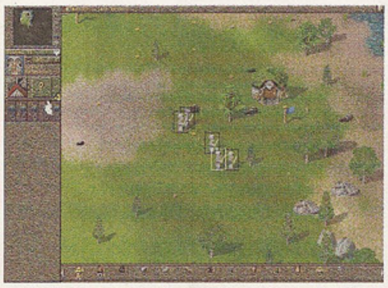
The *Foundation* story doesn't end here, however. Paul Burkey says he's working on the sequel, *Foundation's Edge*, which will also be published by Epic. The game engine is to be re-written in C++, all the graphics are to be redrawn and the control system redesigned. Versions for 68K and PPC Amiga planned.

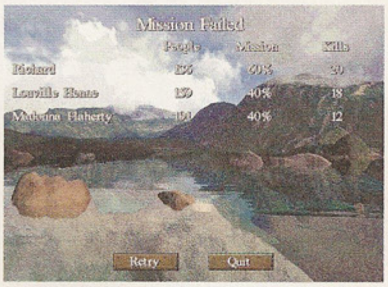
The hustle and bustle of a prosperous society.





Thwack! Take that, you filthy rascal.





(Above) Hi-ho, hi-ho, it's off to war we go. (Right) The price of failure.

able to build more exotic buildings like a bakery, a brewery and a food factory.

The trick to *Foundation* is juggling the raw materials that your society needs and the products that it creates. Each building needs a certain combination of man power and resources to be able to create its product. But you also have to ensure that your population is getting a balanced diet. If they become ill-nourished, they lose inclination to work and desire to reproduce. With small settlements this juggling act is relatively easy, but by the time you've developed a bustling metropolis it really becomes quite tricky. Various options allow you to view the average consumption and production of resources and show which you need to create more of, but it just makes me glad I never pursued a career in politics.

SIGHT AND SOUND

The things that strike you from the moment you load up *Foundation* is the effort that's gone into it, the sheer attention to detail. From the first time you see the glorious animated introduction, view the strangely bucolic title screen, listen to the eerily peaceful soundtrack or watch the fractal-generated island scenes between missions, you know this game has been a labour of love.

The in-game graphics aim for cuteness rather than realism, but they are no less accomplished for that. Buildings belch smoke as a sign of activity, peasants wander about raping the landscape for raw materials, chopping down trees, quarrying rock and sitting beside the water with fishing rods. A thriving society is accompanied by all manner of bangs, clatters and crashes as sound effects. It's almost as much fun just to sit back and watch the game, rather than play it. The only annoying thing is the twee sampled speech you get to listen to each time you select one of your citizens.

(Below) The humble beginnings of a mighty empire. (Left) The next island hoving into view.







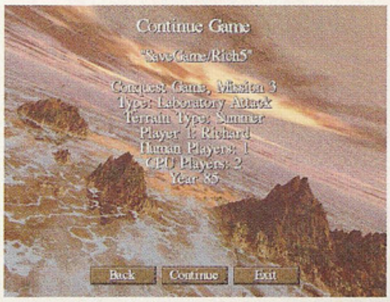
And, hey presto, as if by magic a building appears.

GETTING GRAPHIC

The most obvious change from the original game is the new rendering engine which performs gouraud shading and blending to make the main screen look a lot less blocky. The game is also now optimised for better performance on graphics cards. You can play in a variety of different resolutions, but 640 by 480 is really necessary to get a big enough picture of what's going on. Zorro III graphics cards can handle this size effortlessly, but the limited bandwidth of Zorro II means you're probably better off sticking to AGA. It is supposed be possible to run the game in a window on your Workbench screen, but I couldn't get this option to work (although Ben could).

Foundation is a deeply absorbing game. Okay, so the control system isn't perfect and the missions really are not varied enough, but eventually you'll get caught in it's spell. It's not as compulsive as *Civilisation*, though. I never found myself suddenly realising that it was six o'clock in the morning, having utterly lost track of the previous ten hours. But, nevertheless, it's a game that will draw you in and you'll keep going back to.





(Top) Choose your island paradise. (Above) Restarting a saved game.

SUPPLIER: Epic Marketing
TEL: 08700 110013
PRICE: £15
REQUIREMENTS: AGA or graphic card, 030 processor or better, 8MB RAM and CD-ROM drive

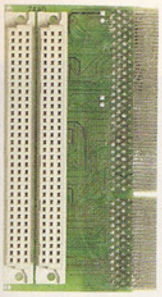
Pros and Cons

- + Gorgeous production quality
- + Great value for money
- + Absorbing gameplay
- − Annoying speech

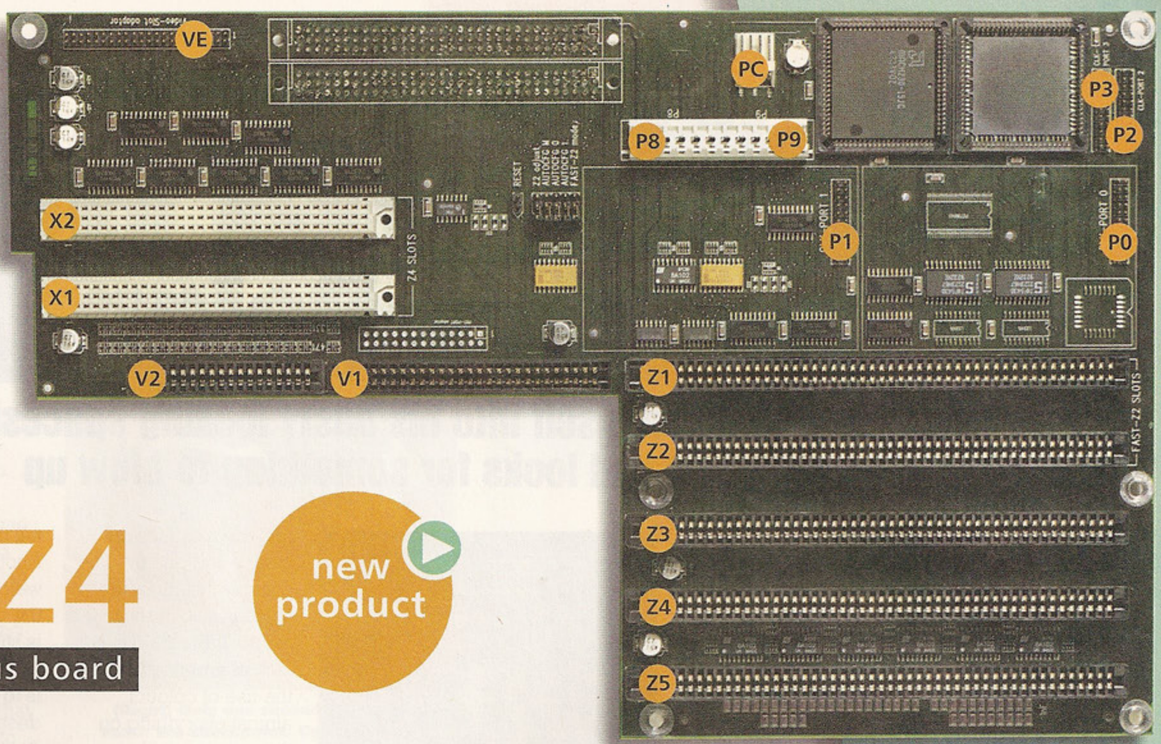
OVERALL VERDICT:
If you missed it first time around, buy it now.

90%

from £125.95



Pass through connector for expansion port



new product

the new Z4

the ultimate A1200 bus board

Z4 the ultimate bus board for Zorro II boards is now available for the A1200 Power Tower and includes:

- Five Zorro II slots
- One video slot aligned with the first Zorro slot for all major graphics cards
- Option Video slot enabler for users of card with scan doubler or flick fixer
- Four A1200 style clock ports
- Connector for reset cable
- Jumpers to activate double speed transfers on the first two slots
- Floppy drive power lead connector for CVPPC users
- Two extra fast Z4 slots for future ultra fast cards
- Pass through and compatibility jumpers for all major accelerator cards
- The latest Cybervision 3D will support the double speed feature of this bus board

Z4 board (for A1200 Power Tower)	£125.95
Video Slot Enabler	£24.95
Z4 board inc. Apollo 68040 28MHz accel.	£199.95
Z4 board inc. Blizzard 1240 40MHz accel.	£239.95

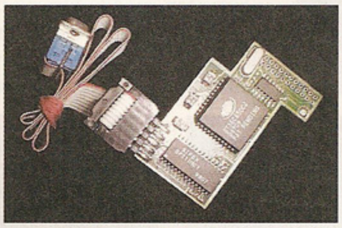
Z1	The first Zorro slot -It is aligned with the video slot for use with a graphics card
Z2	The second Zorro slot - Cards connected to Z1 and Z2 can run double their speed
Z3 - 5	The other 3 Zorro slots
P0	It is a replica of the standard Amiga 1200 clock port
P1 - 3	Can be used by future revisions of software and clock-port cards
V1 - 2	Slots used by graphic cards (together with Z1)
X1 - 2	Extra fast slots - for future expansions
PC	If you have a Cybervision PPC and you need extra power you can draw it from this connector
VE	The optional Video Slot Enabler connects here
P8 - 9	The Power Supply connectors, connect directly here

powerLAN for the a1200

The Amiga can now share with other PC's available resources on a Local Area Network (LAN).

- 10Mb (megabits) PCMCIA Ethernet Card
- Adaptor to connect the card using standard Ethernet cables (available separately)
- Software included

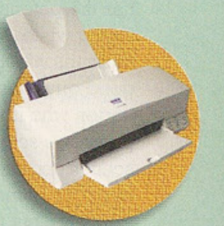
PowerLAN for the A1200	£45.95



new product

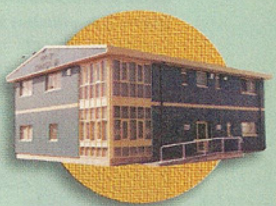
twister mk2 fast serial interface

Fast serial interface 460,800 bps (up to 691,200), works with the Z4, can be used with the Melody 1200 audio card and the 'handshake' is hardware controlled **£24.95**









tel 01234 851500 fax 01234 855400

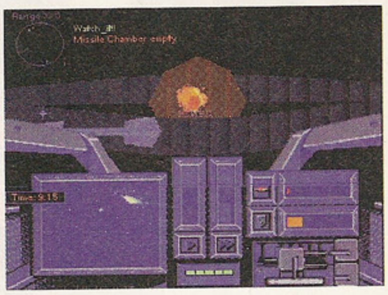
internet www.powerc.com email sales@powerc.demon.co.uk

Unit 82a, Singer Way, Woburn Road Ind Est., Kempston MK42 7PU

delivery 2-3 days £5 next day £8 saturday £15 northern ireland £15 monitor/tower £8 (u.k. mainland only)

VISA MasterCard

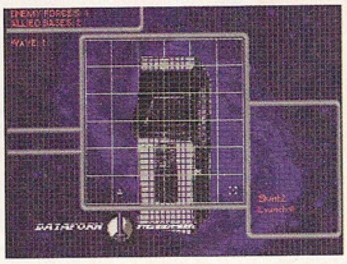
Starfighter - D'Yammen's Reign



Paul Cavanagh straps himself into his nasty looking spaceship, locks and loads his big weapons and looks for something to blow up

There's a distinct lack of 3D space simulators on the Amiga (can you remember the last time one was released? Epic? Wing Commander? A long time ago, anyway). So it's about time that we got something new. But is it any good?

Well, to be honest, it's not bad, but it isn't nearly as good as it should be. It has the potential to keep you playing for a long while – there are plenty of missions which can be attempted as the good guys, the bad guys or as a rogue trader, who is only in it to make money. There are some fairly impressive cut scenes and a music score that ain't half bad. The gameplay can become quite involving, but to be honest this game really doesn't impress me very much.



This is a particularly pointless arcade version of the game. Very strange.

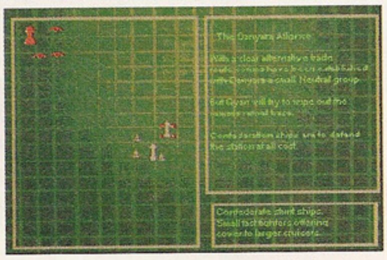
There's a distinct lack of imagination in the use of colours, almost everything on the screen is either black or grey which is bland

So what's the problem? Well, there's more than one, but let's start with the graphics. The only thing you see during gameplay are lots of stars, with other ships zipping about. No suns, planets, or interesting space stations to look at. The ships in the game are crudely rendered and the graphics are messy and glitchy. The cockpit design of the ships is also fairly crude, there's a distinct lack of imagination in the use of colours, almost everything on the screen is either black or grey which means that the game is terribly bland. If your ship is shot the whole screen flashes, which just looks messy, as though the game is bugged. Most of the time the game runs fairly smoothly, and it feels as though you are floating through space, but there's just not enough polish here, and there's certainly nothing that would make you want to sing the praises of *Starfighter*, which is a shame. The Amiga is more than capable of running these sort of games with lot more style than is on offer with here.

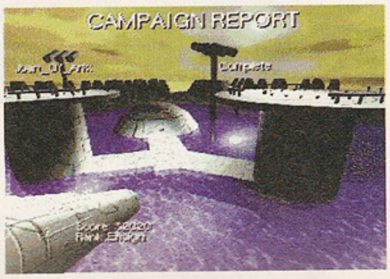
Another problem is that there just aren't enough features in this game. There are no external views – you can't even see what's happening behind you without turning your ship around. There are only two different weapons – lasers and missiles. You can upgrade the power of the lasers and missiles, but it would be better if you could buy new types of weapons (you know the sort of thing – you start with concussion missiles and build your way up to super-smart nuke-type homing missiles). While there are eight different ships, they're all fairly similar, it's just that they have varying top speeds, turning circles, weapons capacities etc. Selecting a different ship doesn't radically alter the gameplay style, in fact, it's pretty hard to tell the difference between them. Another feature that would have been welcome is trading. Even though there is the option to play a rogue trader, there is still no option to actually engage in trading. As a rogue trader, the objective is to hang about until ships are destroyed, and then pick up the debris. At the end of a mission this debris is automatically sold, and you are credited with the proceeds. There's no option to wait until market prices improve and you can't select different types of commodity, so a potentially involving aspect of the genre has been completely neglected.

It's worth pointing out that the copy of the game that I was running is bugged. On a few occasions the game just crashed for no apparent reason, and I found the save game system to be unreliable. Epic Marketing say that a new version of the game will be shipped soon, so I hope that these problems have been addressed.

If you like this sort of game, it's probably worth your while buying it – it's not bad, but don't expect to be amazed. It really is a shame that a little more work and imagination couldn't have been put into this game, because it's got a lot of unrealised potential.



(Above) A mission briefing and (below) a campaign report.











(Above and right) Oh look! It's another big grey ship to blow up! How very original. Yawn.

SUPPLIED BY: Epic Marketing 01793 514188
PRICE: £20.00
REQUIREMENTS: 2MB Chip RAM, 4MB Fast, CD-ROM, 120MB hard drive space

Pros and Cons

- \+ Lots of missions
- \+ Pretty cut scenes
- − Dull graphics
- − Could be so much better

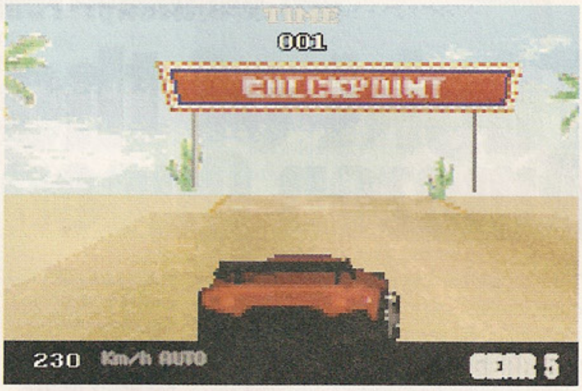
OVERALL VERDICT: An average space combat game which delivers far less than it promises.

55%

Turbo Racer 3D

Brrrm brrrm! Screech! Paul Cavanagh makes up his own sound effects for this racing game





(Right) Only one second left before you reach the checkpoint. Gasp! Excitement!

Oh how I do love a good 3D racing game! It was *Ridge Racer* that persuaded me to fork out the folding green stuff for a Playstation and then the realism of *Gran Turismo* made my jaw slacken with its stunning visuals. That's all very well, but what is there for the Amiga? Not a lot; so I've been looking forward to playing this particular game in the hope that it would give those PlayStation titles a run for their money. What a shame then, that not only does it come nowhere near to even equalling those games, but it's also considerably worse than some racing games that have been out for ages on the Amiga. *Jaguar XJ220* is a better game by far, and those Lotus games that were so notably missing from the *Gremlin Collection* offer more in terms of playability and lasting appeal. Like I said, a real shame.

THE NEED FOR SPEED

I hardly know how to start explaining why this is such a disappointment, but I have to start somewhere, so I'll plump for speed. It should go without saying that any game with the word turbo in the title should run fairly fast. This game runs like a Robin Reliant going up a very steep hill whilst towing a big caravan. The disc contains two versions of the game – Low Res and Hi Res. On the office 1200 the Hi Res version runs, but boy is it slow. The Lo Res version runs at a playable rate, but at top speed (230km/h) it feels more like 30mph. So I tried the game on Richard's A4000 '060, which did improve things. However, it was only the rate at which the car moved from left to right that got faster; the forward momentum was barely affected. Even on the Hi Res version, the graphics are chunky and quite messy, and the obstacles that appear in your path don't really seem like true 3D objects. The trees, rocks, cones etc, are all heavily pixellated, and I've seen better in the classic 2D racing games I named earlier.

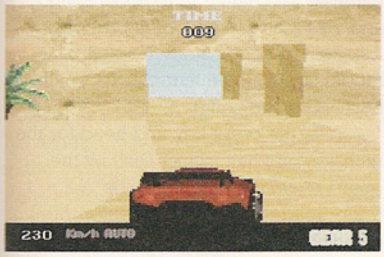


Sliding about on ice could be fun if there was any sensation of speed.

> **A game with the word turbo in the title should run fairly fast. This runs like a Robin Reliant going up a very steep hill whilst towing a caravan**

Another problem with the game is the lack of options available. The choices that you are given are whether to use a manual or automatic car, whether you are playing against the clock, or are trying to finish within the first three positions, and if you want awful music number one or awful music number two. And that's it. You can't select from a number of tracks to race on, you can't choose from an interesting selection of vehicles, you don't have a wide range of camera angles from which to view the race. All of these options are standard for 3D racing games on other platforms, so why are we Amiga owners denied such simple pleasures? You get to have a red car, with the camera above and behind, race a single lap of each race in a specific order and no arguments, please. What really bugs me is that you can't redefine the controls, so you must use 'up' for accelerate, when I always prefer to use the firebutton. This is such an obvious omission as to make it completely unforgivable. Oh yeah, and I wasn't joking about making up my own sound effects, either. If you want screechy braking sounds you have to do it yourself. Pants, basically.

I'd love to end this review by saying that the gameplay is the saving grace of this title, that if you somehow manage to overlook the glaring omissions and tortoise-like speed there's an addictive gem to be found, but I'd be lying. To begin with you do want to try that course just one more time so that you can complete it and move onto the next one. But it doesn't last. You soon realise that without speed, a racing game is simply not worth playing.







(Left) Sometimes it's a bit of a relief when the game ends. (Right) Wheee! What fun! Drive over little pads and your car goes flying through the air. Landing is the tricky bit.

SUPPLIER: Alive Mediasoft
01623 467579
PRICE: £14.99
REQUIREMENTS: CD-ROM, 4MB RAM

Pros and Cons

- − Slow, really slow
- − Chunky pixellated graphics
- − Not enough options
- + Um, it doesn't seem to crash

OVERALL VERDICT: A very disappointing game that is simply ruined by its lack of speed.

28%

GAMEBUSTERS!

Got sick of seeing that old game stuck on the shelf because it's just too tricky? Fear not, for Paul Cavanagh is here to help

Flight of the Amazon Queen

There are loads of you out there who are completely stuck in *Flight of the Amazon Queen.* You all seem to be baffled by the part where you have to push buttons that match a mosaic in order to open a door.

The beauty of these games is that you can stare at beautiful women and not get physically injured.



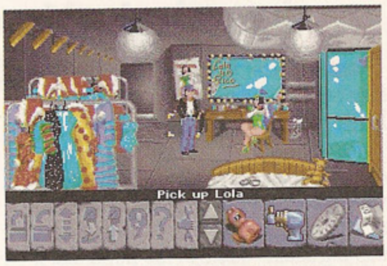
It's little wonder really, because I've consulted back issues of *AF*, various books and the Internet, and have come up with three different answers! I don't know which is the correct one, so you'll just have to try them all out! What is certain is that you have to vacuum the mosaic first. After that, try the following:

Move the button on the bottom row, second from left, then move the button on the third row down, third from left.

Or: Push the button on the bottom row, second from left, then move the third button from the left on the row above the bottom row. (I think this is slightly different to the above solution).

Or: This solution seems ridiculously complex, but if it works, who cares? Right, if you take the following as a representation of the grid of buttons:

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
S	T	U	V	W	X
Y	Z	1	2	3	4



Room for a small one? You should try putting everything in your inventory once.

Press the symbol that corresponds to Y, and the symbols change. Press A, repeatedly press Y then B. Then YC, YD, YE and YF.

I'm sure one of these solutions is bound to work! Good luck.

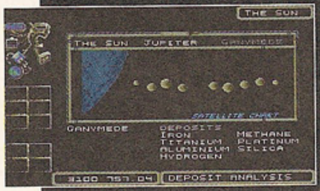


Deuteros

D Coswell would like to know if there are any cheats for production in this game. Indeed there are:

Go to the surface or Orbital Stores room, hold down shift and press C. The screen will turn green, do it again and the screen will revert to normal colours. You should notice a set of numbers in the corner of the screen. Click on any icon and then go to the stock screen. While it looks as though you have one of each product, you actually have an infinite supply. Also, you will now be able to build space stations with only one section.





Another cheat: If you are about to be taken over by Mechanoids go to the screen with the big picture of an Orbital Factory and advance time until it disappears. Find the self-destruct device, activate it and quickly turn it off again. You should get your colony back with over a hundred drones.

If you want to cheat, do it right with an infinite amount of supplies and plenty of drones for colonisation.

Monkey Island 2

Vizz is stuck on the second part of the game and is looking for two parts of the map. He says that he already has Captain Marley and the Antique Dealer's map portions. Vizz is also stumped when it comes to opening the trap door in the cottage and winning the drinking contest. I hope the following will help.

Go to the Antique Dealer and buy a 'beware of the parrot' sign from him. Put the bag of parrot food on the hook where the sign was and wait for the parrot to move. Next, buy the mirror. Now you can have your drinking contest. When you receive your mug of booze, empty it in the tree. Now use the near grog (this can be found in an envelope that is in the cell in which Kate was imprisoned) on the mug. When you have won the contest use the mirror on the mirror frame, open the shutter and leave the house. Place the telescope on the statue, go back into the house, and you should be able to get into the basement and retrieve a part of the map.

Now to get Rapp Scallion's part of the map. You need to buy a saw, and go to the laundry on Scabb Island. Use the saw to remove the wooden leg of the man sitting on ledge. Leave, and enter the woodman's hut while he is distracted, where you can nick his hammer and nails. Go to Booty Island and visit Stan's Used Coffin Emporium. Ask Stan to demonstrate his deluxe model, and use the hammer and nails to trap him in the coffin.

Take the crypt key and head for the mansion on Phatt Island. Distract the guard by telling him about the three-headed monkey and enter the governor's bedroom. Use any library book and you should be able to get the 'Book of Famous Pirate Quotations' from the bed. Go into the library and look up 'Recipes' and take a book called 'The Joy of Hex'. Then go to the cemetery on



Flashback



At times like these it's tempting to just go looking for a vine and pretend to be Tarzan.

Mr M White wants to know how to find the credit card to open some doors. Well, I'm presuming you're on level one, but you are a bit confused. The credit card is used to buy things with, and the first lot of credits can be found on the screen in the picture. In order to open some of the doors you need to get hold of an ID card. To get this you need to find an old man who has been attacked by mutants. From the starting position go right and down until you get to a point where there's a bridge that needs to be activated. Go right as far as you can, and then up and right and you'll find the old man. He'll tell you that he needs his teleporter. If you find it and return it him, he'll give you the ID card. It's not really that difficult to finish this level, so I won't give you a full walkthrough, as it'd be more fun to do it on your own. To start with though, you need to find a power cell and charge it up in a recharge point and then use it to generate the bridge. Go over the bridge and then left and then head up to find the teleporter. Good luck.

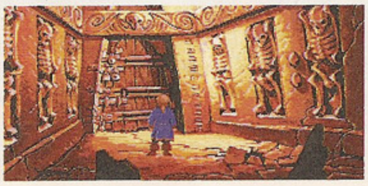




When it comes to hiding treasure pirates aren't the brightest, so always look for a big X first.

Scabb Island and use the key to enter the crypt.

You need to use the quotations in the book to work out which coffin Rapp Scallion is in. Open the coffin and take his ashes. Go and visit the Voodoo Lady in the swamp and find a jar labelled Ash-2-Life. Ask her about the potion and she'll make you a brew. Go back to the crypt and use the Ash-2-Life on the ashes and you'll resurrect Rapp Scallion. Have a good old chin wag with him and he'll complain about leaving the gas on and give you a key. Go to the Steamin' Weenie Hut on the beach and enter it using the key. Turn the gas off, return to Rapp Scallion and then he will give you his part of the map. The rest, as they say, is up to you. AF



Wherever there are bones and ashes you can be sure they'll be spooky music too.

Jurassic Park

Lee Graham has asked for help with this game. There's not much I can offer, except for level codes. I hope they help.



In case of emergencies, always hang about with someone that looks tastier than you.

A1200 VERSION

Level two	E54C67AA
Level three	D5F4AB62
Level four	E5C4B37A
Level five	95B48B42
Level six	85A4834A
Level seven	B584935A
Level eight	85B48B42
Level nine	F54C6FAA
Level ten	C57C77B2
Level eleven	D564A762

A500 VERSION

Level two	8EB75C3D
Level three	DE5FB8C5
Level four	EEE77740D
Level five	BEB75C25
Level six	AEA7542D
Level seven	BEA7542D
Level eight	CE5FB0C5
Level nine	FE6FA8DD
Level ten	EE77780D
Level eleven	9E074035

SNIPPETS!

SUPERFROG

Just a couple of level codes to add to the ones printed in our last issue. I still haven't managed to finish the last level, so if anyone has got the code for the final section where you have to defeat the witch please send it in to me. Ta.

Ice World level 2 - 131072

I also seem to have got a bit confused as to which level was which in the last issue, as I thought the only code I was missing on Ice World was level 4, but it wasn't. So, while I've supplied nearly all of the codes now, be aware that some of those in *AF129* may not be in entirely the correct order. Sorry!

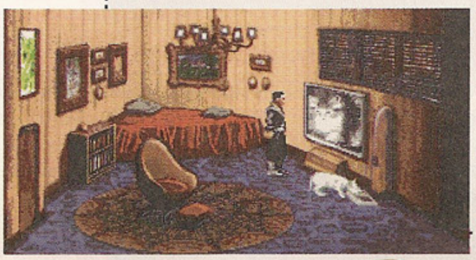
Project F - 564897

BENEATH A STEEL SKY

Alex and Kirk Bunston are stuck on a bit where something nasty comes and gets them through a hole. I think the answer to the problem is to have a light bulb in your inventory (it's in the power plant at the factory). There's a light socket by the hand rail for you to stick your bulb in. If you do this you should be able to get past the hole in safety.



Not all of the creatures in this game are nasty.



SEND US YOUR TIPS & QUERIES!



Have you got hints, cheats, tips or general good advice for any Amiga games? We'd especially like some for the newer ones on the market. Or, if you've got a query about a game, give us a brief explanation of it, where you're stuck, then drop us a line and we might be able to answer it in Helping Hands. Please don't send us SAE's though as we'll just steal the stamps.

Name of Game(s): ....

Point where I'm stuck: ....

....

....

....

Send all tips and questions to:

HELPING HANDS • Amiga Format • 30 Monmouth Street • Bath • BA1 2BW

Paul Cavanagh **never really knows what to expect when it comes to those**

On the CD -ReaderStuff-/-ReaderGames-

Reader Games

As you can see from this issue's selection, there's always a mixed bag of goodies in the little parcels of software that come streaming into the *AF* office. Every day I tear open the jiffy bags with gay abandon and pop those floppies into place, eager to see what unexpected delights will unfold before me. So without further ado, let's have a good peek at the little treasures I've found.

Sponsored by Amiga £50 WINNER!

BugZ



Mark Botfield's eight months of hard work has resulted in this snazzy little *Space Invaders* clone. I think it's great fun, and strangely addictive; and although I should be heartily sick of this sort of game by now, this one keeps me coming back for more. Just a bit of practice on *Bugz* can yield interesting results. You see, if you manage to collect a few different power-ups without getting hit by the bad guys you can build up some pretty awesome firepower. At one point I had double-shot combined with a plasma type weapon along with a satellite gun. There was plasma flying everywhere and those alien bug things didn't know what had hit them. Great fun. If only I could do it again – grrrr! The variety of pick-ups is what makes this game that little bit different from most other *Space Invaders* clones. They improve your ship's speed, weapons and shields. The flip controls pick-up is a bit of a pain, but it adds a challenge. It's actually pretty difficult to collect the icons, and it's really frustrating to watch them fall out of reach as you career about trying hopelessly to catch them. Well done Mark, you've come up with an attractive, slick and fun little game, which is pretty impressive for your first attempt in Blitz Basic. Have £50 for your troubles.



Good stuff! Here's a fully souped up ship, and there's an extra shield on the way.



Those flying saucers are worth points, but they're hard to get.



Destroying two aliens in one go is possible with the right weapons.



AUTHOR: Mark Botfield
LANGUAGE: Blitz Basic
VERDICT: A fun and addictive little game that proves the oldest ideas can sometimes be the best.

READER WARRANT

When you're sending in your submissions make sure you also give us:

1. An address where you can be contacted.
2. Details of the language used to create the game.
3. A recent photo of yourself.

The address to send your stuff into is:
READER GAMES • AMIGA FORMAT • 30 MONMOUTH STREET • BATH • BA1 2BW

Everything included on the *AFCD* must have a reader warrant with it. Just cut it out of this page or photocopy it, sign it and send it in to us with your game and a photograph of yourself. A last reminder: if you don't include this warrant we simply won't be able to put your game on the CD – that means you won't be able to have it judged by other readers.

In respect of all material which forms my reader contribution to Future Publishing's *Amiga Format*, I hereby warrant that:-

1. The material is original and does not infringe any other material or rights;
2. The material does not contain any material which is defamatory, obscene or indecent and is exempt from classification under the Video Recordings Act 1984;
3. That there are no legal claims against the material provided;
4. That I have full power and authority to provide this material to Future Publishing.

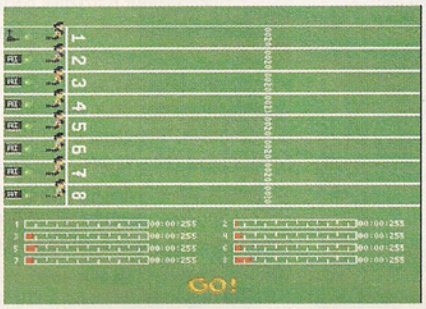
Signature: ______________________

Race

Take your joystick in your hand and waggle furiously. That's all you have to do in this game. Once upon a time there were legions of sports simulations that used this method of control to get athletes off the blocks. It's stamina sapping, and that's the whole point. I think these kind of games died a death after people began to get cheesed off about having to throw joysticks in the bin on a weekly basis. Then Repetitive Strain Injury hit the headlines, and people decided that joystick bashing might not be quite such a good idea. So this game brings back memories of when, as a spotty adolescent, I used to waggle my joystick about habitually down my local youth club. Ahh, those were the days. Rune Bernstenn and friends coded this game in Assembler, and it's turned out to be a bit of a giggle, so get waggling.



Race has got a very professional looking title screen, just to get you in the mood.

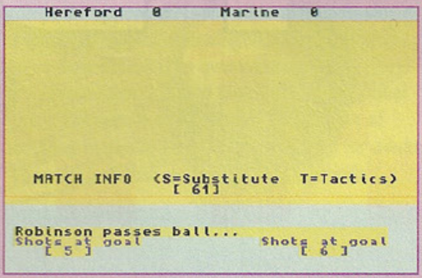


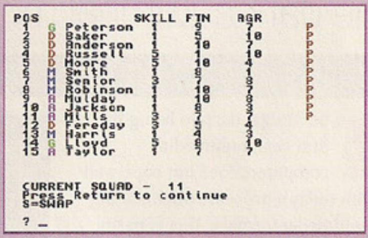
Ready, steady, waggle, waggle, waggle! Ow! My wrist hurts.

AUTHOR: Rune Bernstenn
LANGUAGE: Assembler
VERDICT: A slick little game that's guaranteed to give you wrist-ache and a broken joystick.

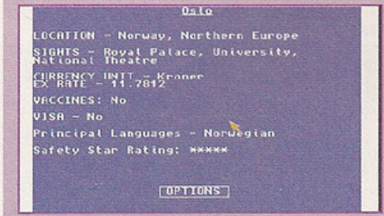
Soccer League Manager/ Dream Holiday

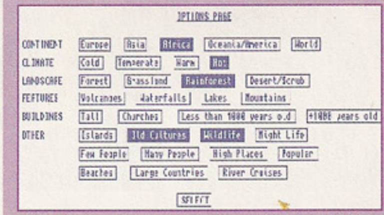
These two AMOS programs have been sent in by David Sykes from Halifax. *Dream Holiday* isn't really a game, but it's worth looking at nevertheless. It allows you to choose the features that you are looking for in a holiday destination, and based on these choices will suggest a number of resorts, and give you some basic information on them. *Soccer League Manager* is a text based football manager game, where you get to control all aspects of managing a soccer team from finances, including buying and selling players, to tactics for the beautiful game itself. You control substitutions, formations, whether to play defensively or in an attacking style. There's plenty here to keep you going for a long time.





Why do my teams always lose so badly?



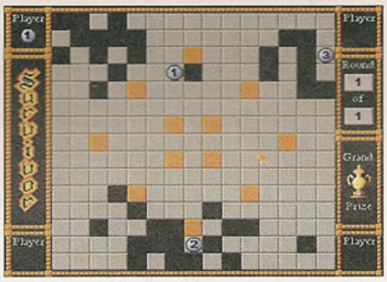


Find out where the best night life in Africa is with Dream Holiday.

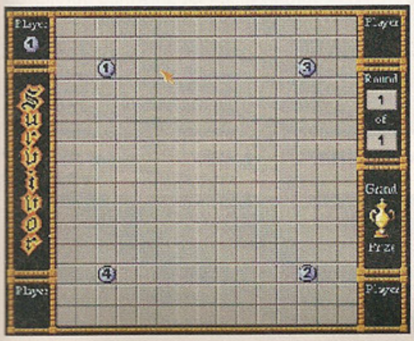
AUTHOR: David Sykes
LANGUAGE: AMOS
VERDICT: Two quite complex text-based programs that work well.

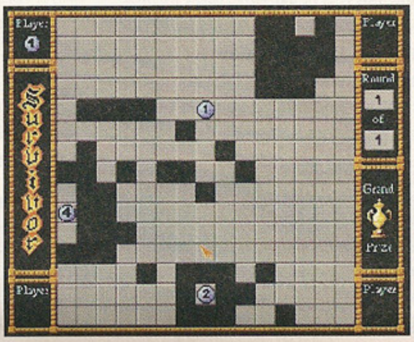
Survivor

This is another one of those game that is simple, yet strangely compelling. The game can be played with two to four players, and the computer can take the role of any (or all) of the players. During a turn each player can make two moves. In the first, the player moves one square in any direction, and in the second the player removes a square adjacent to an opponents piece. The idea is to remove enough squares so that an opponent can no longer move. Once you start playing, you realise that the rules are very simple, and it's very easy to pick up the gist of the game. You would be well advised to play against human opponents though, as the computer is not very clever, and doesn't try very hard to get out of sticky situations. This really is a fun little game, and there are quite a few options to add interest. Thanks for sending it in Scooter (aka TM Belch).



AUTHOR: Scooter
LANGUAGE: Amos Pro
VERDICT: A good, fun little puzzle, which is best played against your mates.





Like many great games, Survivor is simple and fun. Give it a go!

SEND US YOUR READER GAMES

These pages are for you! It's a great place to show other Amiga owners what you're capable of, and if we really like what you send us, we'll send you the lovely sum of £50. Nice! So send your reader games to: Reader Games, Amiga Format, 30 Monmouth Street, Bath BA1 2BW.



PD Select

Richard Drummond has gathered and stored a fine selection of wares for the dark autumnal months ahead but he's always willing to share…

Soft Cinema V0.5 beta pre-release

The Amiga, despite being the first real multimedia computer, does not cope well with today's processor-demanding multimedia formats. This is partly because the major players in this area of technology will not deign to support the lowly Amiga. The other is that the Amiga's ageing hardware architecture is just not up to the job. But, wait a minute, you think. It's an ideal task for that muscley PowerPC board I splashed out all those pennies on. Well, we'll see.

***SoftCinema* is a player for QuickTime and AVI movies, the formats currently in vogue for delivering audio and video content over the Internet, and runs only on PPC Amigas. It supports several of the standard codecs (particular methods used for compressing the audio and video components of the stream) including up to version 5 of the Indeo codec. It cannot handle streams packed with the Sorenson Video or QDesign Music codecs as supported by *QuickTime 4* and employed in most new *QuickTime* movies on the Web. Apple own the exclusive rights to these algorithms and they are not about to license them to an Amiga developer. Nevertheless, the author claims that he is working on a way to port these codecs.**

***SoftCinema* requires either an AGA or CyberGraphX display and can generate video output to a window on your Workbench screen or, currently on AGA systems only, to a custom screen. On my system, however, the latter option always caused a system crash. Sound playback is only via AHI, the third-party retargetable audio standard for the Amiga. This requires more processor time than purely native playback, but the up-side is that you can spool the audio to your 16-bit soundcard.**

The author claims that *SoftCinema* is the ultimate movie player, but this is just not borne out by tests. For example, with the Lithtech movie we provided on *AFCD43*, *SoftCinema* could only manage a measly 4fps when playing back both the audio and video streams. The rate crept up to 11fps when the audio stream was dropped. CyberAVI, an AVI player for 68K processors only, could manage the full 15fps playing both audio and video. The advantage of *SoftCinema*, though, is that the brunt of the load is born by the PowerPC co-processor. CyberAVI consumes virtually all your 68K's spare cycles during playback. *SoftCinema*, on the other hand, leaves you with about 70 per cent of your processor time free – which means you can get on with other things while watching a movie.

***SoftCinema* requires the PowerUp kernel to run, although it will work under the PowerUp emulation for WarpUp. Alas, its even slower under emulation, though, crawling along at about two thirds of the speed of the real McCoy.**

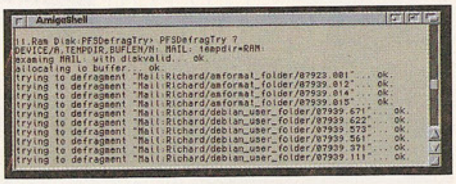
I was disappointed by the performance of *SoftCinema*, but this is yet early days for this package. At the moment you would be better off sticking to CyberAVI. The only use for *SoftCinema* is streaming movies from the Internet – where fidelity is not paramount and you don't want your machine to grind to a halt while decoding data.



SoftCinema playing the Lithtech animation from AFCD43. What this doesn't convey is that it's ambling along at 11fps.

BY: Jacek Cybularczyk
WARE: Shareware
FROM AMINET: gfx/show/softcinema.lha
SIZE: 223K
REQUIRES: PowerPC, AHI and AGA or CyberGraphX

PFSDefragTry V37.4



PFSDefragTry is dull to watch but rather useful.

Formatting your hard disk partitions with *PFS*, Greed's bombproof replacement for the Amiga's standard *FastFileSystem*, gives many advantages: file access is much faster and it is virtually impossible to invalidate a disk. The disadvantage, though, is that most low-level disk software just doesn't work any more. This is not such an issue with the new *PFS3* which includes *PFSDoctor*, a program to repair damaged *PFS* partitions – but there is still no disk optimiser compatible with *PFS*.

The only way at the moment to defragment a file on a *PFS* disk is to manually copy the whole file to a new position on the disk. This works because PFS tries to write new files in sequential disk blocks. A bit of a laborious job, however.

PFSDefragTry is a tool to automate the process. It calls PFS's DiskValid command to get a list of all fragmented files on a disk and then tries to relocate each file. It copies them all to a temporary disk of your choosing, deletes all the originals and then copies them back. Simple, but effective. Note that *PFSDefragTry* is not always capable of optimizing a disk, especially if it is nearly full.

The crucial flaw with *PFSDefragTry*, as it stands at the moment, is that it completely ignores all file attributes. When a file gets written back to the original disk, it's creation date is updated, it's protection flags are set to the default 'rwed' and file notes are irrecoverably lost. Not only that, but file links completely baffle *PFSDefragTry*.

Despite it's limitations, the method that *PFSDefragTry* employs is sound. With a bit more work it could become a truly useful tool. If anybody feels like taking on the job, the source code is included with the archive.

BY: Martin Steigerwald
WARE: Freeware
FROM AMINET: disk/optim/PFSDefragTry.lha
SIZE: 6K
REQUIRES: PFS2 or PFS3

TotalCalc 1.23

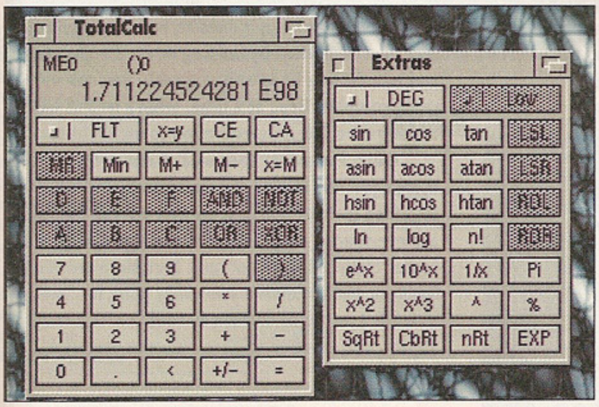
My desk is a complete and an utter mess. When I find myself having to do a calculation, it's usually easier to scribble it on the back on an envelope rather than trying to unearth my calculator. If you find this scenario familiar, then *TotalCalc* will be a boon to you, too.

TotalCalc is a software version of your garden-variety, 13-digit, hand-held scientific calculator. Hence it has the all the usual numeric, arithmetic, trigonometric and hyperbolic functions that you would expect to find in such a calculator. Usefully for computer people, it also features hexadecimal and binary modes in which you can perform the standard logical operators including, more unusually, logical and arithmetic shifts.

Visually, it is similar to the Calculator tool that Commodore shipped with Workbench – but more heavy-weight. Like Commodore's offering, *TotalCalc* has a simple GadTools interface, but unlike the former it is split between three windows. The first is the main calculator with the numeric and arithmetic buttons. The more advanced and less used functions are operated from a second window. The last window lists the contents of *TotalCalc*'s 10 item memory. The GUI is configurable but only by setting tooltypes in its icon.

TotalCalc is a commodity. This means you can shove it in your WBStartUp up drawer, forget about it, and pop it up with a hotkey combination whenever you need it. Another nice feature is that you can cut and paste results to the system clipboard. This makes importing figures into other programs a breeze.

My only complaints with *TotalCalc* is that it definitely needs more keyboard short-cuts – it's a pain having to reach for the mouse to use some function – and it would be nice to able to log calculations to a file. Nevertheless, *TotalCalc* has become a permanent addition to my Workbench.



TotalCalc is ideal for when you run out of fingers to count on.

BY: Luca Carminati
WARE: Cardware
FROM AMINET: misc/math
SIZE: 48K

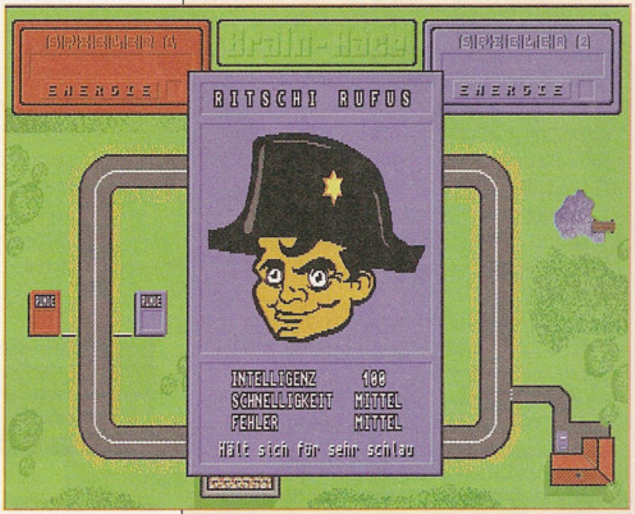
Brain Race

Welcome to the racing game with a difference. The goal is the same as normal: to drive a car a fixed number of laps around a track. But the race is not won by a heavy right foot and demon cornering. No, it is the driver with the sharpest arithmetical skills that gets to pass the checkered flag first.

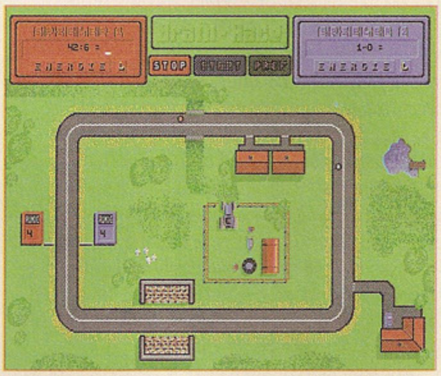
The game asks you a series of arithmetic questions, either a simple addition, subtraction, multiplication or division. Get the answer right and your car is shifted into top gear and propelled forward; get it wrong and it comes to an abrupt halt. If you delay in answering, the car shifts down the gears and eventually stops. If you answer the questions quickly enough, the car will maintain its speed and zip around the track.

You can choose either to play against a fellow human or against a randomly chosen computer opponent. These all have silly names and varying levels of intelligence. You can also select how difficult the questions are.

***Brain Race* is a neat idea for an educational game. I'm sure it would take the chore out of teaching maths to kids. It's also not bad for adults who wish to brush up their numeracy skills.**



He might not look it, but this fellow is the brightest of your opponents.



Brain Race lets you hone your mathematical skills and feed your hunger for speed.

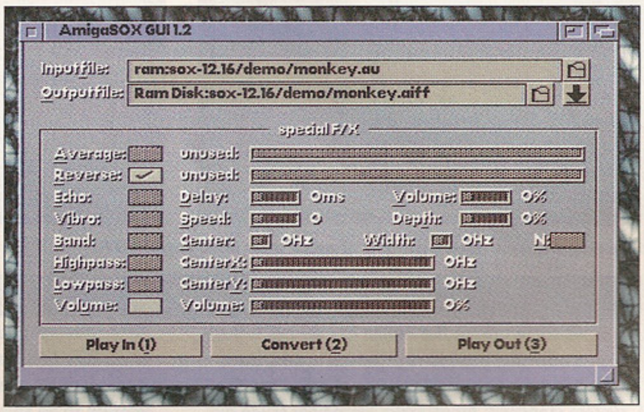
BY: Franz Janisch
WARE: Freeware
FROM AMINET: game/think/BrainRace.lha
SIZE: 774K

SoX

The Sound Exchange or *SoX*, is a universal sound translation package. It exists for a host of different platforms, can handle any sample format you can possibly think of and can perform a range of effects into the bargain.

SoX understands all the common sample formats such as 8SVX, AIFF, CDDA, WAV and can cope with RAW files in several binary formats. It can perform run-of-the-mill effects like altering the sampling rate and converting from stereo to mono, but what makes it more interesting is that it includes a box of effects similar to what your average axeman would be equipped with: chorus, reverb, flanger and phaser.

Using *SoX* takes a bit of practice. It can be run only from the command line and takes a string of UNIX-style parameters. Life can be made easier for yourself by creating some scripts to automate frequent tasks. Alternatively, you could use *AmiSoxGUI*, available from the Aminet, which provides a graphical interface to the *SoX* program, albeit for an earlier version. Getting the best from *SoX*'s range of effects is a real trial and error process; a large section of tips is included in the manual to point you in the right direction.



SoX can be made a lot easier to use with AmiSoxGUI.

One of the nice things about this version of *SoX* on the Amiga is that it is just a straight build of the UNIX code under the ixemul system. This means you can get the source yourself and re-build it for your specific processor (68000 and 68020 binaries are included in the package), even for the PowerPC under the PowerUp kernel.

Continued overleaf ➡

BY: Various
WARE: FreeWare
FROM AMINET: mus/edit/sox-12.16-bin.lha
SIZE: 267K
REQUIRES: ixemul.library

SimpleFTP V1.6

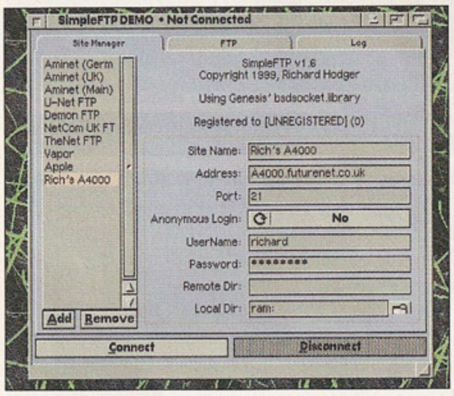
The most popular stand-alone FTP client for the Amiga is probably Vapor's AmFTP. This package is showing its age somewhat these days (it's even being replaced by the new mFTP in the *NetConnect3* package), so you might be looking for a replacement.

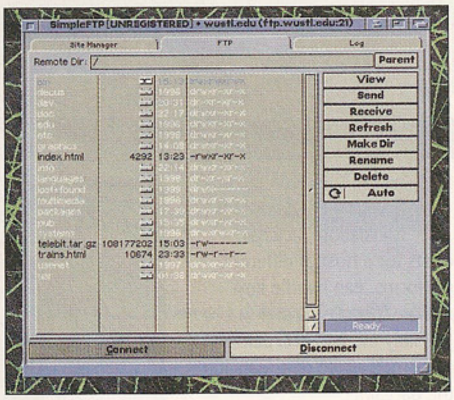
SimpleFTP is what it says, a no nonsense FTP client. Don't be fooled, though, it's still very usable. Its interface is built with MUI and consists of a single window divided into three pages. The first is for configuring a list of FTP sites, the second is a current directory listing for the site your are logged into and the third is a log window (which reports all FTP commands sent to a server and any replies).

SimpleFTP lacks AmFTP's double lister mode – that is, you only get a listing of the FTP site's directory not any local ones. To upload a file to a server, for example, you have to pop up a file requester and select a file. This method is more cumbersome than drag and drop supported by AmFTP. SimpleFTP also does not have a special mode for handling Aminet sites. The point where it scores over AmFTP, though, is that the log window is always visible – so you can easily find out what's going on. Another nice feature is that it can put an AppIcon on your desktop which will upload any files dropped on it to the current site.

Configuration of SimpleFTP is performed only via tooltypes in its icon. For instance, you can select a tool for viewing files here. Note that it doesn't support filetyping of any kind such as MIME. You may only choose one viewer which is used for all files.

While there are no real flaws with SimpleFTP, I personally wouldn't use it as a substitute for AmFTP: the latter's ADT mode is too useful. And I find an FTPMount, which mounts an FTP site on your Amiga as if it were a normal disk, the most flexible tool for the bulk of my FTP work. Still, you may prefer SimpleFTP's interface, so why not give it a try?

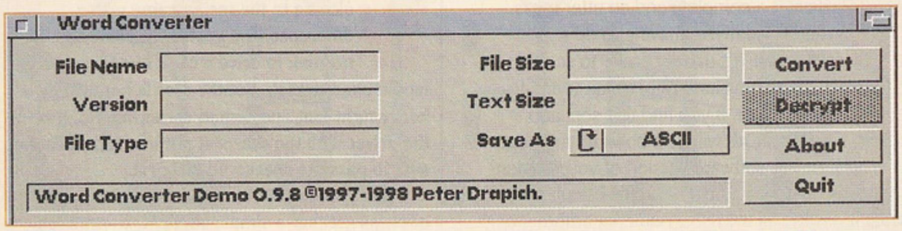




File transfer just doesn't get any simpler than this: SimpleFTP.

BY: Richard Hodger
WARE: Shareware
FROM AMINET: comm/tcp/SimpleFTP.lha
SIZE: 82K

WordConverter 0.9.8



If it allows you take work home from the office, maybe WordConverter isn't such a good idea...

When it comes to handling the multitude of different file formats out there, the Amiga is king. This is because, unlike the Mac which is easily fooled by a wrong filename extension, Amiga software typically examines the internal structure of a file before deciding what type it is. But while the Amiga software is deft at interpreting graphics files, it is generally not so good with proprietary document formats such as *MS Word* files.

A solution to this problem is *WordConverter*. It is able to convert documents from *Word* for DOS or *Windows* versions 2, 5, 6, 7, 8 and 97, *Word 2000* and *Word 4* or *5* for Mac documents into vanilla text, RTF (rich text), AmigaGuide or HTML. Decryption of password-protected documents is supported.

WordConverter is operated by a simple graphical interface. Choose the source document, the output filename and the desired output format and hit the convert button. That's all there is to it. It may also be called silently from the shell, a handy feature for integrating it with other software. ARexx Scripts are provided for CED and PageStream to use *WordConverter* to directly import documents.

This version of *WordConverter* is restricted to saving only the first thousand characters of an output file. Paying the £10 registration fee will get you the full version.

WordConverter is a simple, well-executed concept and it could be a real life-saver for transferring work between the office and home.

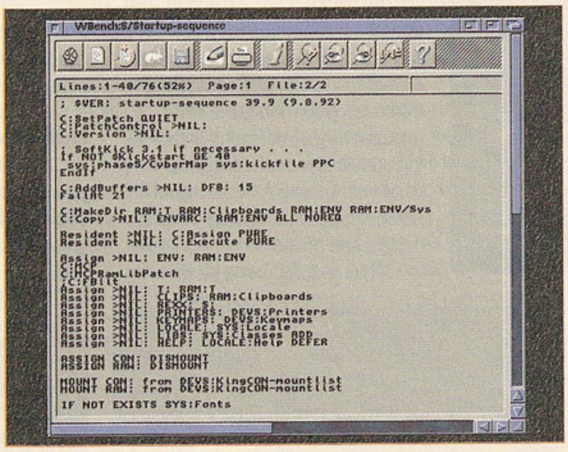
BY: Peter Drapich
WARE: Shareware
FROM AMINET: text/misc/WordConverter.lha
SIZE: 89K

EvenMore V0.54

For some reason the Amiga has always lacked a powerful text viewer – which is odd, since it is such an everyday piece of software. The system standard, *More*, looks incredibly crude by today's standards and *MultiView*, while great for handling datatype-supported filetypes, is utterly devoid of features, not even possessing a search function.

***EvenMore* is an attempt to provide an up-to-date, feature-rich environment for viewing text files. It is highly configurable and allows string and pattern searching, bookmarking and printing. It supports the XPK system for loading crunched files, has on-line help, is fully localised, has AppIcon and AppWindow functionality and can open on the screen of your choosing. *EvenMore* even has a primitive filetyping system, which can be used to spot non-text files and pass them over to another tool instead of trying to load them itself. *EvenMore* is one of the few Amiga text viewers to be able to copy marked text to the system clipboard, but it does so in a non-intuitive way. Text is marked by holding down the Shift key and left-clicking lines on the screen; you can only mark complete lines at a time. What's wrong with the standard left-drag operation to highlight text?**

While *EvenMore* does what it does well, I feel there's just too much crammed into it. The main interface is clean and easy-to-use, but the menus are overloaded and the preferences window is rather cluttered. I cannot fault *EvenMore* on features, but the author has really gone for overkill. I just wish somebody could write a text viewer with a better balance between elegance and power.



It looks simple on the surface, but EvenMore has a toolbox bursting with features.

BY: Chris Perver
WARE: Freeware
FROM AMINET: text/show/EvenMore.lha
SIZE: 252K

Serious

Apollo Z4

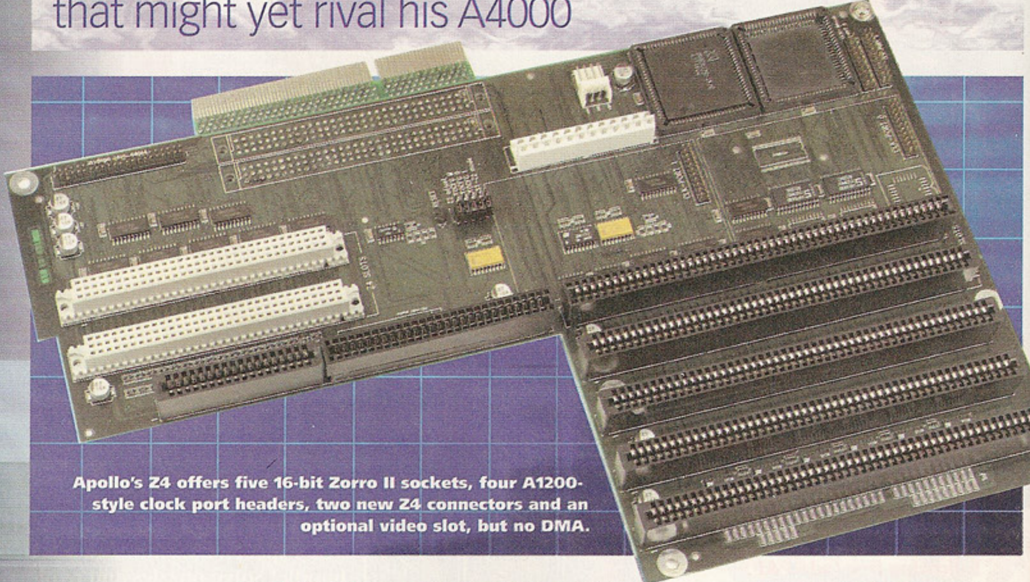
Simon Goodwin seriously expands an A1200 that might yet rival his A4000

Even with the current furore about the future direction of the Amiga taking place all around, there's plenty of innovative hardware and software being released for the only Amigas that exist right now – the "classic" range. As *AF* has always said, the new machines will doubtless be great when they eventually come out, but in the meantime, your current Amiga is capable of so much, and there are so many ways to improve it now.

That's not to say we aren't looking forward to the almost mythical machines from Mick Tinker, or, more recently, IWin, or even whatever will replace the now defunct MCC, but users need to realise that these machines aren't available, but all the stuff we review is and can make your Amiga's life so much better.

After all, you wouldn't take me seriously if I said I was waiting until videos were the size of your little fingernail, could record for 100 hours and only cost £50 before buying one, would you?

SERIOUS INDEX



Apollo's Z4 offers five 16-bit Zorro II sockets, four A1200-style clock port headers, two new Z4 connectors and an optional video slot, but no DMA.

The problem with an A1200 is its limited expansion potential. Apollo aim to cure this, with an expansion backplane boasting a dozen expansion slots – five largely compatible with the 16-bit Zorro II standard, two new 32-bit Z4 sockets, four eight bit ones, based on the much-perverted A1200 internal 'clock port', and an optional A4000-style 25-bit video slot.

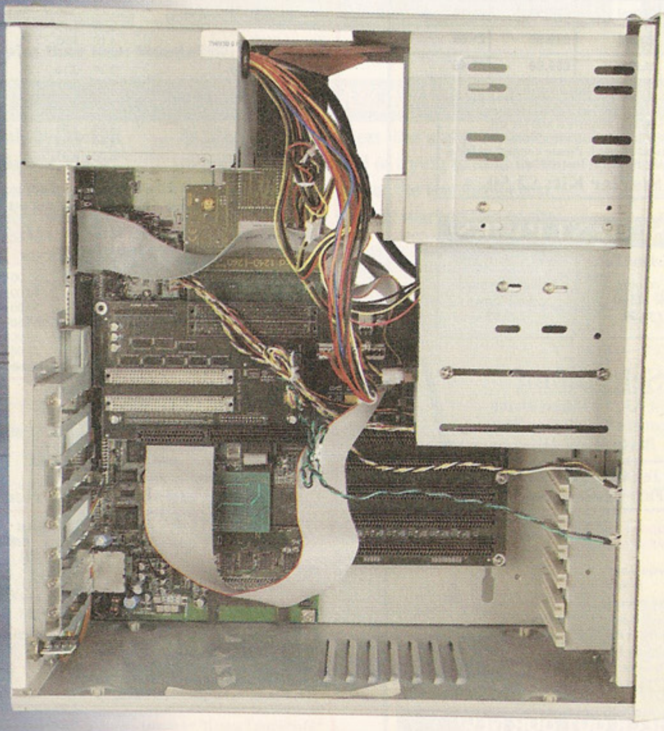
PACKAGE

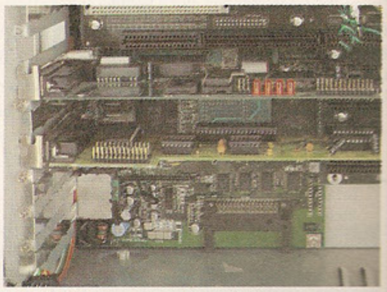
German manufacturers Apollo supply just bare boards, but the bulk of their sales will come from fully expanded systems, based around the Z4 and Amiga 1200 motherboard. The real test of the effectiveness of Z4 expansion is how dealers like Eyetech and Power Computing build it into a complete computer.

Eyetech's demonstration Z4 system came with an A1200 motherboard and lower case, an Apollo 040/40-SE accelerator, phase 5 Cybervision64/3D graphics card, four IOBlix Zorro II serial ports and a PortJnr high speed serial interface on the primary Z4 clock port. The whole lot was screwed to a piece of plastic coated chipboard shelving, pending adaption of their tower case, restricting access to the PCMCIA slot and IDE expansion.

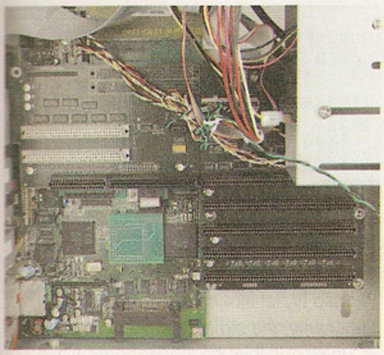
Eyetech have integrated the RTG and AGA graphics through an external keyboard adaptor, using the blank key next to Return on the A4000 to switch between RTG and AGA. I used a true multisync monitor to maintain access to intermediate AGA modes like Super72 and HiGfx, but most people will be happy with PAL AGA for games, flicker-fixed interlace for old applications, and

Power's Tower slot guides carry on a couple of positions below the last Zorro II slot on the Z4 backplane.





PCMCIA I/O will require a right angle adaptor in most towers.



The Z4 backplane fits over the right-hand side of the A1200 motherboard.

CyberGraphX for modern applications. Both are compatible with cheap SVGA monitors thanks to the internal flicker fixer and video switcher integrated into the keyboard-controller. This is a good combination.

Power Computing shipped their Z4 system in an Elbox tower case, with a Picasso IV graphics card, swiftly transplanted to Ben's A4000, a Power Flyer 32-bit IDE accelerator, and a 40MHz Blizzard 1240 with 128MB SIMM. The Z4 backplane overlaps the Flyer and PC keyboard interface, so don't expect to remove those easily once you have cards plugged in. It's not as bad as the MicroniK one which blocks almost the whole A4000 motherboard. Power get the prize for making it all fit together well, albeit at a higher price. Only the lower four Zorro II connectors line up with the back panel slots, and the other three card positions lack support for the front edge; however this does ease IDE cable access on a combo Buddha/Catweasel Zorro card in the first Zorro slot.

Apollo have solved a major problem to make autoconfiguration work with all 32-bit accelerators. The A1200 has an autoconfig output, used by accelerators, but they understandably fail to provide an output for other boards when they've finished. Two jumpers allow 0 to 3 autoconfiguration cycles – for accelerator ROMs and interfaces – before Zorro II cards get tested. Set this to match the number of ROMs on your cards, or zero for later phase 5 ones that hide internal configuration cycles. All Apollos, Vipers, Blizzards and Typhoons should work.

GVP-M cards have only 24-bit addressing, so they're incompatible as their RAM clashes with the Zorro II space. I got the FPU but no fast memory when I tried one on Z4. Old 'PCMCIA unfriendly' Blizzard 020 and Apollo cards are similarly incompatible.

CLOCK PORTS

The Z4 board has four independently addressable clock ports, but most drivers only recognise the first one, which appears to software like the A1200 motherboard port. Eyetech say that Harald Frank of VMC will change his Hypercomm drivers to support the other three positions, and Jens Schönfeld's Catweasel drivers could also be patched. Prelude designer Marc Albrecht has agreed in principle to but his Prelude 1200 boards will only fit in clock port position 0, which has normal A1200 addressing.

The clock port is a spin-off of the general-purpose expansion designed into the A1200 chips, before it was clear what the final hardware configuration would be. The full header, fitted in a minority of machines, includes chip RAM signals, intended to allow a cut-down system to be expanded from 1MB to 2MB chip RAM, but like the A4000/020, this crippled design never became a product, though provision for it remains apparent on the circuit board.

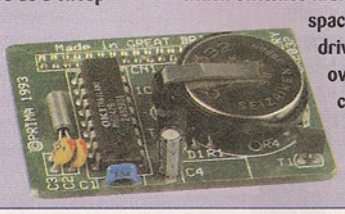
Instead Commodore left 22 pins at one end of the dense 2mm-pitch connector, leaving only those needed for a real-time clock card – missed off to save a dollar – and potentially cheap network expansion, based on PC chips. In practice the port's been diverted far beyond Commodore's original intentions. Real-time clocks were made, but soon supplanted as a cheap extra on almost all A1200 RAM and accelerator cards. Now you can plug in sound cards, Catweasel disk controllers, and a host of serial and parallel ports, all benefiting from cheap, simply-adapted – albeit slow and cramped – PC expansion chips.

In fact the A1200 clock port works very much like the PC's ISA slot, with the same read and write control signals and timing. This is natural, because the same signals are already needed for PCMCIA and IDE ports, so the GAYLE chip can provide them to the clock port at no extra cost. The difference is that ISA slots are wired in parallel, sharing 16MB of address space, while clock ports have ready-decoded signals, fixed at a small range of addresses.

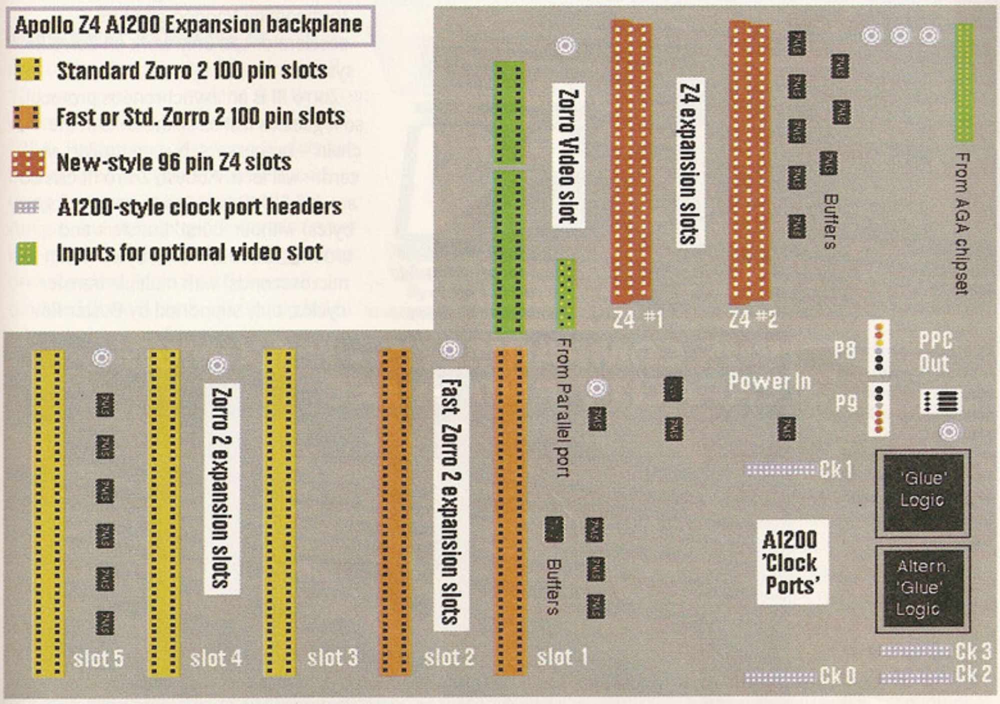
In theory most clock port drivers could be patched to use alternative addresses, but there might be mechanical problems. It would help if a general solution for clock port addressing could be proposed, to save having so many variants for all clock port gadgets, but it's hard to see who will do it, given that their competitors might benefit. Hypercomms already have more than a dozen sets of drivers, differing only in addressing, even without clock port variations.

Clock port addressing uses a 64K area, normally holding 1024 copies of the same registers, only using the second most significant byte of each of 16 long words. Not even PC manufacturers would attempt a clock port video card!

Z4 splits this into four 16K areas, still only using 16 bytes each. This is simpler than RBM's approach, which switches multiple ports through the default space, but we must still wait for adapted drivers. Physically many combinations overlap, and ports 2 and 3 are so close that one device in them will need a flying lead.



A clock card for the A1200 clock port – now there's a novelty.



The dozen expansion ports and sundry are distributed around the Z4 backplane, with several empty sockets to allow the interface logic to be implemented with different chips if component supplies are typically erratic.

AMPS AND VOLTS

The Z4 board is powered from standard P8 and P9 power input sockets from a PC AT power supply. This then powers the complete Amiga, via the trapdoor and Z4 accelerator pass-through socket. There's an extra floppy-disk style power output socket for PPC and BVision combination that overloads the trapdoor edge connector. At Eyetech's suggestion, phase 5 have promised to put a floppy-type power bypass on the G4 cards, so Z4 backplanes have a matching one. There's one A4000-style video slot, ideal for Picasso IV, but this needs extra connections to the custom chips, via a socket in the corner of the Z4 board and an extra-cost adaptor. There's also provision for a lead carrying parallel port controls to the same sockets, for some Genlock and scan modifiers and Video Toasters, but this is not implemented on initial production.

Continued overleaf ➡

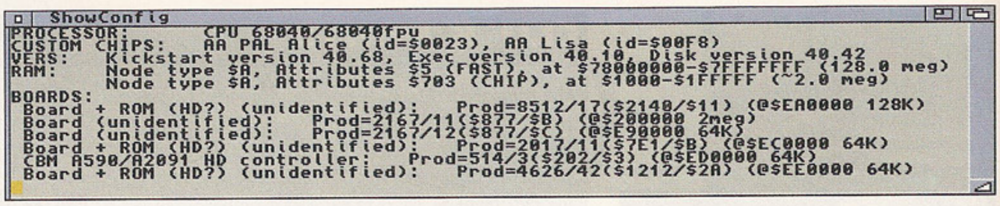
LIMITATIONS

Inevitable limitations stem from the design of the A1200 trapdoor slot. Z4 clashes with PCMCIA memory, and cheap accelerators that put up to 8MB of RAM in the Zorro II space. Some old Apollo and GVP-M boards deliver the FPU but no fast memory, because the Z4 usurps the address space. If yours supports RAM expansion beyond 8 MB, you need not worry.

Z4 slots cannot support DMA, because A1200 accelerators don't expect to have data squirted into them through the trapdoor port, and lack input address lines beyond the motherboard space. So if you need fast SCSI, the Blizzard daughterboard is the only way to get Direct Memory Access; DMA transfers let the processor get on with real work.

> **Z4 is beautifully made, carefully and pragmatically designed, but £130 may still seem a lot for a bunch of connectors, however ingenious**

Basic Zorro II, Typhoon and Squirrel ports will work (with a right-angle adaptor if using a tower case) but they'll slow the processor with constant polling. PCMCIA I/O cards should still work, including modems, Ethernet and SCSI, but there's no address space left for credit-card memory.



```
ShowConfig
PROCESSOR:      CPU 68040/68040fpu
CUSTOM CHIPS:   AA PAL Alice (id=$0023), AA Lisa (id=$00F8)
VERS:   Kickstart version 40.68, Exec version 40.10, Disk version 40.42
RAM:    Node type $A, Attributes $5 (FAST), at $78000000-$7FFFFFFF (128.0 meg)
        Node type $A, Attributes $703 (CHIP), at $1000-$1FFFFF (~2.0 meg)
BOARDS:
 Board + ROM (HD?) (unidentified):   Prod=8512/17($2140/$11) (@$EA0000 128K)
 Board (unidentified):   Prod=2167/11($877/$B) (@$200000 2meg)
 Board (unidentified):   Prod=2167/12($877/$C) (@$E90000 64K)
 Board + ROM (HD?) (unidentified):   Prod=2017/11($7E1/$B) (@$EC0000 64K)
 CBM A590/A2091 HD controller:   Prod=514/3($202/$3) (@$ED0000 64K)
 Board + ROM (HD?) (unidentified):   Prod=4626/42($1212/$2A) (@$EE0000 64K)
```

Six boards working on a Z4 expansion: we tried Picasso IV, CyberVision64/3D, Catweasel, GVP I/O, Multiface, Buddha, Octagon, Sunrize AD516 and Emplant cards successfully.

OVERALL

Z4 is an impressive product, but it does not yet merit a Format Gold award, because there's too much we're still awaiting. So far we've got a solid five slot Zorro II interface, itself an impressive development for 1200 owners, and a lot of potential. Z4 is beautifully made, carefully and pragmatically designed, but £130 may still seem a lot for a bunch of connectors, however ingenious.

Soon drivers should support the extra clock ports, allowing bargain expansion, although Zorro II cards are more efficient and easier to fit. Fast Zorro II cards seem sure to come – including a 5MB/s Flash Buddha – though availability might be erratic for such niche variants of existing production. It's already attractive in price and compatibility, but true Z4 expansion boards, and in particular the graphics card, with transform the potential of this motherboard.

If you were looking at Zorro II, look no further. If you were considering a big box Amiga with Zorro III, this might give you pause for thought. Given a Z4 graphics card, you could buy 4MB of 32-bit RTG and Z4, with 10 spare expansion slots, of various types, for less than the cost of a Picasso IV, let alone the Zorro III system! Either way, the old criticism that the A1200 is 'unexpandable' no longer holds water.

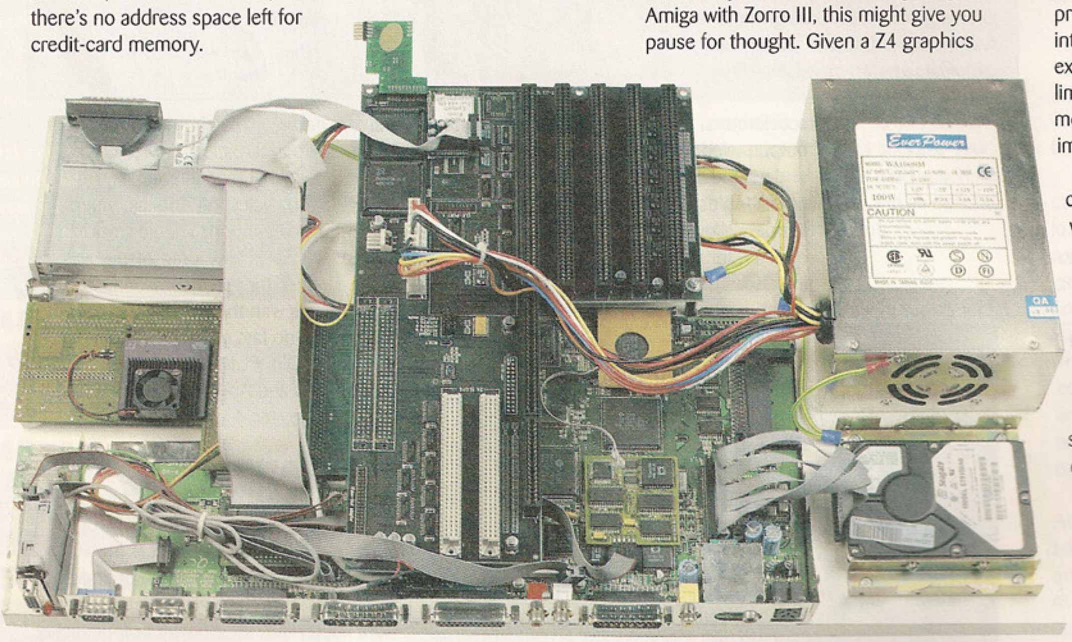
FROM ZORRO TO Z4

The competition comes from Zorro III systems, including new A4000T production relocated to Germany, and secondhand A3000 and A4000 systems, and perhaps Ateo's ISA-based tower if the French firm makes usable drivers for more than Picasso96.

Zorro III has uncommon advantages. Silicon Studio multi-track cards are Zorro III only, and necessarily so, but not many people need eight simultaneous audio channels with 20-bit resolution. Another 20-bit multi-track card, California's Soundstage Pro, was Zorro III specific, but is no longer made. A4091 and Fastlane DMA SCSI cards were re-released by DKB and phase 5, but are no longer in production, following the move to SCSI integrated on CPU cards. Zorro III RAM expansion allows high capacities but is limited in speed compared with motherboard RAM, although a vast improvement over Zorro II.

Zorro III offers much larger address capacity thanks to 32-bit addressing, which does not clash with the limited space – about 8MB – for Zorro II or Z4 boards. The need for extra address space means that VillageTronic's forthcoming Voodoo graphics accelerator can only work on Zorro III systems.

Zorro III is an asynchronous protocol, so it goes as fast as all the links in the chain – processors, bus controller, and card – will let it. At best, Zorro III can do around 58MB/s (65ns to transfer four bytes) without 'burst' transfers and around 123 MB/s (256 bytes within 2 microseconds) with multiple transfer cycles, only supported by Buster Rev 11.



Eyetech's prototype demonstration Z4 system arrived screwed to a hefty piece of plastic-coated chipboard. We were told, "this way you can see how it all fits together".

A3000 and A4000 owners, take heart. There may not be many Zorro III cards around, but there are more than there will ever be for Z4. Zorro III supports much more address space, faster interrupts, and Direct Memory Access. It could go much faster but no-one, except perhaps Mick Tinker, seems likely to revise Buster to remove the bottleneck in existing Zorro III implementations, which is not the cards or the processors, but the bus interface between them. For now, Z4 should match the raw speed of any existing Amiga expansion bus.

BUS COMPARISONS - MAXIMUM CAPACITY AND SPEED

	Bus type	Bits	DMA Speed	Space
Clock port	8	N	0.9	64 K
Zorro II	16	Y	3.5	16 MB
Ateo Bus	16	N	9	16 MB
Z4 slot	32	N	18.5	116 MB
Zorro III	32	Y	24.5	16 GB

In practice address space and speed in megabytes per second will be less than these maxima. Zorro III could be much faster if the Rev. 11 A4000 Buster was updated. Older Busters are even slower, lacking multiple transfer cycles.

PRICE COMPARISON

EYETECH PRICES	POWER COMPUTING PRICES
Z4 expansion: £129.95	Z4 expansion: £125.95
To follow:	Power Tower inc. PC Keyboard and interface: £119.95
Z4 in tower inc. PSU, EZ Keys 2 and PC Keyboard: £199.95	To follow:
Video slot adaptor: £29.95	Video slot adaptor: £24.95
Z4 Graphics card: £99.95	Z4 Graphics card: £99.95
	Z4 fast IDE flyer: £TBA

11. In practice the Zorro III implementation in Commodore's Buster bus controller retards this, so transfers that have to go through the motherboard manage no more than 25MB per second.

Retina, Picasso IV and CyberVision graphics benefit from the extra speed of Zorro III, although slower Zorro II versions were generally available. The market for Zorro II cards is bigger so prices are lower and there's more variety. Over 200 distinct Zorro II cards have been produced, with a choice for most applications, including Ethernet, 16-bit sound, graphics, and I/O cards, and some of the best remain in production.

If you can live with the address limits, shared interrupts and lack of DMA, the raw speed of Z4 is comparable with any 32-bit Amiga backplane

The top speed of Zorro II is the same as A500 fast memory – a little over 3.5MB per second. In practice it's typically half to two thirds this figure because of the need to synchronise and convert each 24-bit address and 16-bit data value en route between the processor, bus controller and Zorro card. Apollo's Z4 backplane solution is less ambitious, but easier to implement.

FASTER ZORRO II

Five of the slots use the normal Zorro II 100-way connector, and the first three run conventional Zorro II cycles, but without DMA. The last two 'fast Zorro II' slots can be jumpered to cycle at double speed, using the same 7MHz clock as 16-bit Amigas, but managing one transfer every two cycles, rather than one every four as on a standard Zorro II card. Specially modified Zorro II cards will be needed to take advantage of this, but the modifications should be quite simple – perhaps no more than a re-programmed 'glue' logic chip.

The Cybervision 3D card shipped with Eyetech's Z4 prototype supports Zorro II and Zorro III. Either way transfers to and from the 4MB video RAM are limited by Zorro bandwidth. My Cyberstorm 2 sustains 16.5MB/second into this card on Zorro III. 40MHz 1240 accelerators manage at just 2MB per second from Z4, comparable to the aging Picasso 2.

At best, the 'fast Zorro II' version of this card could be twice as fast. Some of the theoretical maximum speed of Zorro II is soaked up by accelerator and video synchronisation, although the display overhead is slight unless you're running 24-bit Hi Res modes; I was happy with 256 colours, at the 840 by 560 resolution limit of the ex-IBM single-scan monitor I bought for £5 from a charity shop.

Even at that modest resolution, updates over Zorro II are noticeably faster than AGA in DoubleScan modes, chunky pixel games avoid the need for data conversion, and the on-board blitter moves images in video memory up to 10 times faster than AGA. Scrolling and line drawing benefit substantially in 256 colours, and you can step up to 15-, 16- or 24-bit colour without HAM restrictions. Extra pixels benefit big monitors, too.

DCE boss Thomas Dellert is building the Z4 backplanes for Apollo, and CyberVision 3D under licence from phase 5, so he's building a 'fast Zorro II' version of the graphics card. This performs normally if transplanted to Zorro III, but won't work in normal Zorro II systems because of the double-speed cycles.

At best, fast Zorro II promises a bit over 7MB per second – rivalling ATEO's overclocked ISA bus, but no rival for Zorro III or processor-local graphics, a recent luxury from phase 5. In fact it's no faster than 32-bit transfers to AGA chip RAM on the best accelerators, so you're unlikely to see any improvement in speed over AGA at video scan-rates. At 25 frames per second, full screen NTSC or PAL animations will drain the majority of your CPU time in display updates, on AGA or fast Zorro II alike.

The benefit comes at higher resolutions, where graphics cards have bandwidth to spare – AGA bandwidth may drop below 1MB/second in HAM8 or 256 colour overscan SuperHires or Productivity modes, while graphics cards allow far more colours and pixels with negligible loss of bandwidth.

NEW Z4 SLOTS

Fast Zorro II is just a stop-gap, while new cards are designed. These fit the Z4 slots. Their simple interface is almost identical to that for A1200 fast RAM expansion, but through a three-row 96-hole socket, reminiscent of Apple NuBus, Sinclair QL and SAM Coupe slots. These connectors are popular in industrial systems and more robust than edge connectors, although you risk bending the gold-plated pins from the card if you're not careful.

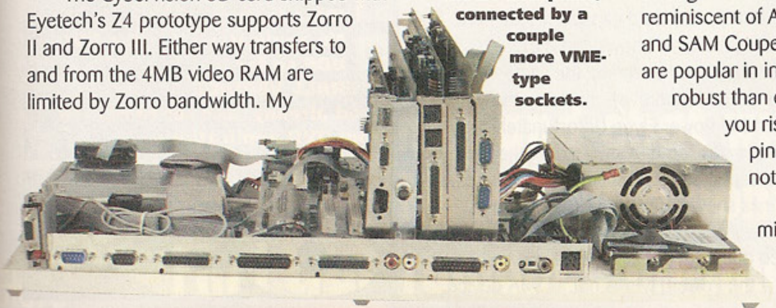
Z4 slots may be are mistermed 'Zorro IV' but this is misleading, and infringes an Amiga trademark. They are not mechanically or electrically compatible with any Zorro cards. They appear to the Amiga operating system like Zorro II cards, competing for 8.5MB of 24-bit address space. They support Zorro auto-configuration, so they tell the Amiga how much they need and the system tells them and their drivers where to address the hardware. This is a big advantage over ISA or clock port expansion.

The maximum bandwidth shared by both Z4 slots is the same as that for well-designed A1200 ROM or fast memory on a standard 14MHz 68020. Each 32-bit transfer needs three cycles of the 14MHz clock. This works out at almost 18.5MB per second, as much as you can expect from a Cyberstorm 2 Zorro III setup. As long as you can live with the address limits, shared interrupts and lack of DMA, the raw speed of Z4 is comparable with any 32-bit Amiga backplane.

Z4 PROMISES

The Z4 interface is well-understood, and much simpler than Zorro III, so it should be possible to make relatively cheap, fast cards. Elbox are adapting the Power Flyer, which should be much easier to fit in Z4 than on the A1200 motherboard. Apollo themselves are developing a graphics card, based on a GVP design with a more recent 64-bit graphics chip, intended to suit the PC's 32-bit VESA bus.

Apollo ruled out using PCI parts because they need lots more logic to adapt them to a Motorola bus; the speed benefit would be negligible, and the cost could be 50 per cent higher. The GVP heritage is meant to ensure compatibility with existing RTG software, including EGS as well as Picasso96 and CyberGraphX. Eyetech and Power Computing are confident that they will be able to sell Z4 cards comparable to Picasso IV for £100 but so far no-one's seen a prototype. A hardware audio and video MPEG 2 decoder for Z4 is mooted to debut at Cologne '99, a welcome first on any Amiga.



A peek behind Eyetech's shelf shows how the Z4 sits over the A1200 motherboard trapdoor slot – the through port for accelerators is under the Z4 backplane, connected by a couple more VME-type sockets.

SUPPLIER: Eyetech 01642 713 185
http://welcome.to/amiga.world
Power Computing 01234 851500
http://www.powerc.co.uk
PRICE: See box

Pros and Cons

- \+ 12 expansion slots in one
- \+ Exceptional compatibility
- \+ Potential for fast Z4 cards
- − 8MB limit and no DMA

OVERALL VERDICT:
Offers lots of potential, especially when promised Z4 cards arrive.

82%

Allegro CDFS

Simon Goodwin tests Allegro CDFS from Elbox via Power Computing

Allegro is a new CD File System. The Amiga is not short of these – indeed, the free AmiCDFS has many happy users – but Allegro claims improved speed and compatibility. More importantly, it supports DVD drives and fills a gap in the otherwise comprehensive software bundled with Elbox IDE adaptors.

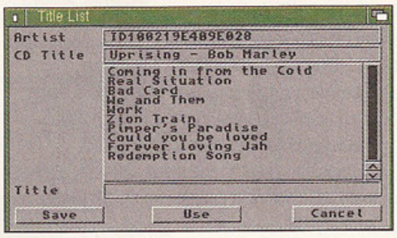
Allegro is supplied with the Power Flyer and 4x EIDE adaptor, but contains a hardware check that stops it working with the first batch of adaptors. If your 4x EIDE board has a white sticker over the Elbox logo, it is compatible with Allegro. Otherwise you'll need an upgrade from Power Computing.

All the features of the original 4x EIDE package reviewed in *AF124* are included: the patch to support large EIDE drives, disk speed tester, tool to spin down dormant drives after a preset delay, and a formatter for removable LS120 and ZIP media.

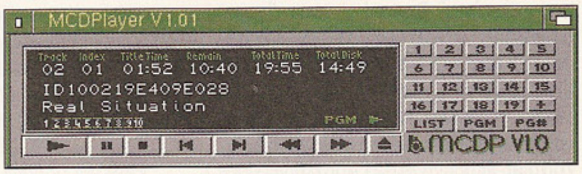
> **The Amiga is not short of CD File Systems but Allegro supports DVD drives and fills a gap in the software bundled with Elbox IDE adaptors**

Besides the Allegro CDFS, which decodes CD and DVD disk formats, you get a CD-related software bundle, including PD and files from Elaborate Bytes' *IDEFix* and HiSoft's Squirrel CD packages. A 'readme' file warns that Power Computing do not offer support on the PD files, and refers Allegro queries to Elbox in Poland.

The new EIDE'99 hardware and software comes with a well-printed 20 page glossy A5 manual, all in English or thereabouts. The new Allegro file system, audio player and 'bonus' CD32 emulator have their own installation program.



The player does not come with CD details, but you can find some on Aminet or AFCD or quickly type your own in, to be automatically recognised thereafter.



The PD MCDplayer deliberately mimics a 'real' CD front panel.

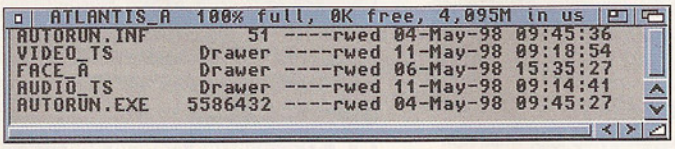
SPEED BUMPS

Allegro claims to be the fastest Amiga CD File System, but this is a moot point as most CD access is limited by the hardware – drive rotational speed, seek and start-up time – and the IDE interface. Oliver Kastl's CacheCDFS has elaborate buffering options which can make it much faster than an unbuffered drive mechanism, but this can be a mixed blessing, as some Workbench contributors have noted.

CD32 games were hard-coded for Commodore's hardware which is slow by modern standards and will therefore often work better without 'speed-ups'. Indeed, the Allegro manual concedes "being an emulation, non-necessarily the game will play as satisfactorily as on a real CD32. Some titles will play OK, but the music won't play properly, and so on."

DIGITAL VERSATILE DISK

DVD uses the same 1200mm disk format as CD, but packs several gigabytes onto each disk. The PC FAT16 filesystem has a 2GB limit, like Commodore partitions, and has to allocate space in 32K chunks to manage that (versus half K chunks for FFS) so another new format UDF, has been invented for high-capacity DVD disks. It's intended for streaming video, and, therefore, is even less efficient than FAT16 for small files.



Allegro can access 4GB of files on this DVD.

DVD speeds and capacities rival hard disks, as the table shows. Note the impressive rate re-reading the same 16K from CD over and over; this tests the drive buffer and Power Flyer. Unfortunately the speed is quartered when reading the same 128K repeatedly, because of CD seek times! All tests showed 0% free CPU time, even while waiting for the drive to spin up, which sliced one meg per second off the first DVD test – the Power Flyer is not a DMA device and IDE devices lack SCSI's time-sharing 'reselection' feature.

FUTURE FORMATS

DVD-RAM is the latest thing: a £400 Panasonic LF-D101E DVD-RAM drive reads at up to 20 times the original CD rate, managing 3MB per second, about as fast as Commodore's 16-bit IDE port can be pushed, and writes 2.6GB single-sided disks at up to 1385K per second. As yet, we lack Amiga applications to write DVD-RAM disks, and programs to decode the MPEG 2 data abundant on UDF disks, but now Amigas can read the raw information, Power PC and MPEG 2 coprocessing will surely come; we confidently expect demos in Cologne.

So far, it's more important that Allegro supports the three ISO formats, including Rockridge Amiga extensions, CDDA music, Photo CD, and multi-session CDR and CDRW disks, drive permitting. But the DVD-UDF support is a first, and Elbox deserve credit for bringing it to the Amiga.

ALLEGRO + POWER FLYER A1200 DRIVE SPEEDS

IDE drive type	Capacity	Raw Speed
Fujitsu M1636TAU HD	1225 MB	5565 K/s
Matsushita SR8584A DVD	4095 MB	3368 K/s
Including spin-up delay	"	2311 K/s
Matsushita SR8584A CD	670 MB	2197 K/s
16K stationary (buffer)	"	5044 K/s
128K stationary (reseek)	"	1221 K/s

Tests used 512K sequential reads unless otherwise stated

SUPPLIER: Power Computing 01234 851500
PRICE: Allegro CDFS (stand-alone) £10, or bundled with EIDE'99 and Power Flyer
REQUIREMENTS: KS3.0, A600 or A1200, ATAPI drive with Power Flyer or Power 4-way buffered IDE interface

Pros and Cons

- \+ A comprehensive ATAPI/IDE package
- \+ Supports new UDF format DVD media
- − Only works with new Elbox IDE adaptors
- − No applications for the DVD UDF so far

OVERALL VERDICT: Good already, and set to benefit from DVD applications.

83%



THIS MONTH IN...
.net
THE UK'S BEST-SELLING INTERNET MAGAZINE
eCATCH 2.0
JPEG OPTIMIZER 2.0
2CD ISSUE WITH 6 FULL PROGRAMS!
With 21 programs for Mac OS
IT CAME FROM CYBERSPACE
The world's most outrageous Web sites!
Go shopping and win £5,000 of prizes!
PLUS!
Make friends and chat with IRC
Shop on the Net with confidence
Find true romance on-line
20 page Web Builder special
November issue on sale now
£3.99 with 2 CD-ROMs (£2.99 without)
http://www.netmag.co.uk/

Infra-Red Keyboard

Infra-Ready? – Simon Goodwin tests a remote key and pointer unit

Eyetech unveiled a cordless control panel at the World of Amiga show. This combines keyboard, pointing device and two mouse buttons into a battery-operated tablet, three-quarters the size of an Amiga 1200, CDTV or 2000+ keyboard. An infra-red beam connects this to a four inch diameter receiver, with five status LEDs at the front. This in turn is wired to a serial port and powered from the keyboard one. A six foot lead goes most of the way, with six inch forks at the end.

The link is reliable at close range, regardless of the orientation of the keyboard. If you stray too far away, or out of line, lost characters are buffered and appear as soon as the beams line up again. Remote controllers will never be as reliable as wired ones, but this is better than most.

If the four AA cells in the keyboard run out, a four foot stereo mini-jack lead can carry power and data from controller to receiver. As with Apricot's early foray into cordless computing, you might use the cable when you have trouble getting a good line-of-sight; this almost defeats the object, but you still have pointing device and keys on a single panel.



The cramped PC layout suffers from tiny function keys, narrow special keys and some Amiga omissions.

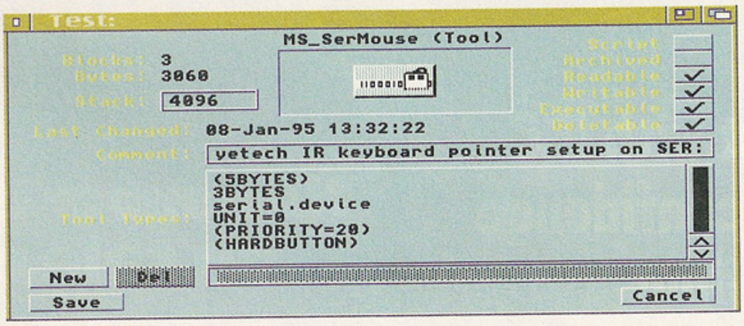
It takes a lot of wires to make a reliable wireless controller!

The infra-red link is reliable at close range regardless of the orientation of the keyboard, although it will never be as reliable as a wired controller

KEY FEATURES

The keyboard is clearly marked but cramped. The keys are not well chosen for an Amiga. There's no numeric cluster but you do get IBM's F11, F12, PrtSc, Scroll Lock, Window and Menu keys. On an A1200 the Help, Enter, right and left Amiga keys would be a lot more useful. A redundant Fn key crowds Ctrl away from the left edge, and the space bar is narrowed by four dead PC keys in the same row.

Eyetech ship the keyboard with EZkeys2, an adaptor which plugs over a CIA chip which is surface-mounted under the protective shielding, near the A1200 keyboard membrane connector. It's easier to fit on the corresponding A4000 chip, but the instruction sheet doesn't mention that. EZkeys2 requires you to use the half-sized F11 and F12 in the top row in place of the Amiga keys, which takes some getting used to. The PC interrupt Ctrl Alt Del mimics the Vulcan neck pinch reset combination, Ctrl Amiga Amiga.



SerMouse set for infra-red pointing through the motherboard port.

THE POINT

Rather than a mouse or trackball, the directional controller is a self-centring knob, the size and shape of a boiled sweet, which you rock to move the pointer. It is not as responsive as a mouse or trackball, tending to resemble the Apple Powerbook laptop joystick. With acceleration and the top speed (3) set in Input preferences, the pointer takes about two seconds to glide from one corner of the Workbench screen to the opposite one, versus a fraction of a second with a genuine Amiga mouse.

With the pointing device positioned under your right thumb, you need two fingers from the left hand to work the buttons opposite. I'm left-handed but use the mouse with my right as the QWERTY layout puts the most useful characters on the left. Thus I can type and use a mouse at the same time, whereas the infra-red setup makes me alternate my left hand between the keys and mouse buttons.

If you own a serial expander with cut-down 9-pin RS232C connectors, you can feed the pointer controls in there. Otherwise Eyetech supply a 9 to 25-pin adaptor and PD SerMouse software to suit any Amiga serial port. You also get various PS/2 adaptors, for PCs with MiniDIN rather than 5-pin DIN and 9-pin D-type keyboard and mouse sockets.

The plug fits Amiga controller ports, but does not work with them – the receiver returns bursts of serial data, rather than the continuous quadrature and button status of a genuine Amiga mouse. Unfortunately it does not suit Punchinello, so it cannot control the early startup menu or games that take over the system.

KEEP CONTROL

Eyetech's infra-red keyboard effectively controls Workbench, web browsing and most applications. You pay a price for the eventual convenience of cordless control, but if you hate flying leads you may be tolerant of its idiosyncrasies.

SUPPLIER:Eyetech 01642 713 185
sales@eyetech.co.uk
PRICE: £59.95 Keyboard and cable adaptors and EZkeys2 controller add £20.00 for Port Junior serial adaptor for A1200 clock port

Pros and Cons

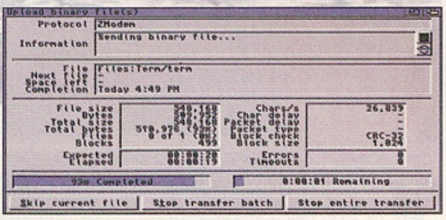
- **+ Integrated keys and pointer control**
- **+ Effective cordless communication**
- **– Cramped and reduced key layout**
- **– Not 100 per cent Amiga compatible**

OVERALL VERDICT:
Quirky but usable Amiga remote control.

69%

Silver Surfer

Simon Goodwin enjoys the neatest 'clock port' serial booster yet



Over 26K per second bypassing the hardware transmit buffer bug.

The insatiable market for fast serial ports is epitomised by the new SilverSurfer for A1200 and compatible 'clock ports'. This collaboration between VMC and Individual Computers uses a 16C550 UART, providing one fast serial port with 16 byte 'first in first out' buffers. These collect incoming and outgoing bytes so the processor can munch them a handful at a time, not individually like the motherboard. Data rates up to 460,800 baud are practical, four to 20 times faster than the Amiga's Paula chip can manage and ample for modems and ISDN.

> *Installation is automatic, without options or questions. The ingenious and stylish startup script seems to take account of every possibility*

The limit depends on your processor, software, and serial protocol. The byte-wide interfaces to Paula and 16C550 are much the same speed, but the SilverSurfer dramatically reduces transfer overheads. There should be no risk of over-runs, with a seven-wire cable and software written to Commodore specifications. My A1240 sustained transfers at 26K per second from Term, nearly twice as fast as Zorro Hypercomms and IOBlix on the same test at the same nominal baud rate, without impeding other tasks.

HONED-DOWN HARDWARE

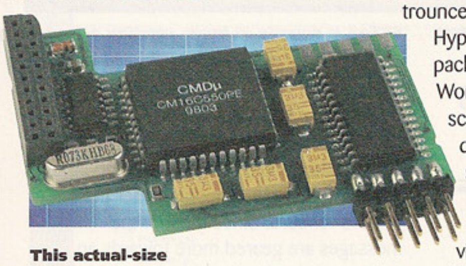
SilverSurfer is a tiny L-shaped board, shaped to fit around IDE Flyers and BlizzardVisions. You must remove the tinplate EMC shielding to fit it. The RS232C standard 25-way D-type connector matches that on the back of the Amiga, and your existing leads, as featured on Spitting Image... You must integrate your A1200 case with the socket, which trails on a card-edge bracket, linked by 20cms of ribbon cable to 10 pins on the board. I let it out past the end of the accelerator to sit beside the computer, by the floppy inlet.

The A4 instruction page is printed in German on one side and English the other. Each purchaser gets a clear colour photograph showing exactly how the board fits on the clock port and the cable leads away to the D-type. It's vital to plug in the SilverSurfer the right way round, like any 'clock port' expansion, or you might short out the power supply. Clock ports are convenient, but afterthoughts.

A few Commodore A1200s, like the one *AF* inherited from *Gamesmaster* magazine, have 40 rather than 22 pins on their clock port. The SilverSurfer fits at the end furthest from the designated pin 1. On Z4 it sticks out at the front from port 0 or 3, and overlaps the board in port 1. It sticks out at right angles to Buddha Flash, still fitting within normal Zorro slot limits.

SIMPLER SOFTWARE

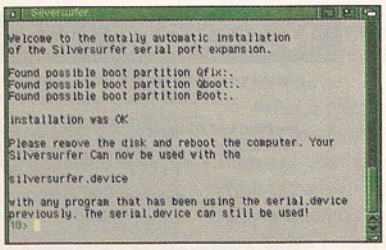
One generic device driver comes on the accompanying orange floppy. Installation is automatic, without options or questions. You boot from the sparsely populated 880K disk, which copies the 17K silversurfer.device file to the DEVS: drawer on every bootable partition it can find. Voila! This laudably-simple installation trounces IOBlix and Hypercom packages, whose Workbench installer scripts ask arcane questions before shovelling PD onto your hard disk besides the vital driver files.



This actual-size photograph shows how SilverSurfer is small enough to fit around phase 5's BlizzardVision and Power Flyer – but not without first removing the tin A1200 EMC shield.

Last issue I lamented the Byzantine GoldSurfer installation procedure. Individual Computers have responded wisely, discarding the Hypercom installation for SilverSurfer. A GoldSurfer version could allay most relevant qualms.

The ingenious and stylish startup script seems to take account of every possibility, and one impossibility, reporting what it's done and what to do next. It's up to you to manually configure serial port applications – SerNet, Miami, Genesis, Term or whatever – to specify silversurfer.device instead of serial.device. Of necessity, that's the trickiest bit; you must read the application manuals.



SilverSurfer software installation sets new standards in simplicity.

Now you're up to the elbows in application configuration, increase the baud rate for faster transfers; 115,200 baud suits most dialup modems, yet is virtually unusable on the motherboard port. You might get slightly more performance on text, thanks to MNP compression, by selecting 230,400 baud, which most 56K modems can handle. Valid rates decorated my Hypercom Zorro review in *AF128*. All the standard speeds appear, including a good approximation to MIDI, but they're not listed on the page or GUI-selectable.

The unit number remains zero unless you have SilverSurfers plugged into Zorro expansion, when up to ten units are allowed. Programmers will need Aminet's port-handler and a home-made mountlist to SilverSurf in a Shell (sic). Zorro alternatives like IOBlix offer lashings more serial ports, though a proposed A600 Gayle adaptor could also allow a second SilverSurfer on stock A1200s.

EXTRA POTENTIAL

If you use any modem or serial link faster than 14,400 baud, you'll soon benefit by replacing a motherboard serial connection with a SilverSurfer. It's also useful for digital cameras, CD32, Siamese and AmiPC links to other computers, SLIP and SerNet connections at speeds to rival ParNet. Finally, it frees up the motherboard port for relatively undemanding SerMouse or home automation.

SUPPLIER: Power Computing
01234 851500
http://www.powerc.co.uk
PRICE: £24.95
REQUIREMENTS: 68020 or later CPU, free clock port (A1200, Buddha Flash, Apollo Z4)

Pros and Cons

- \+ **Fast serial port with low CPU overhead**
- \+ **Fits alongside Flyer and BlizzardVision**
- − **No bundled applications or DOS mountlist**
- − **You must be careful when plugging it in**

OVERALL VERDICT: Saves time and can easily trim phone bills beyond its cost.

90%

ST Fax

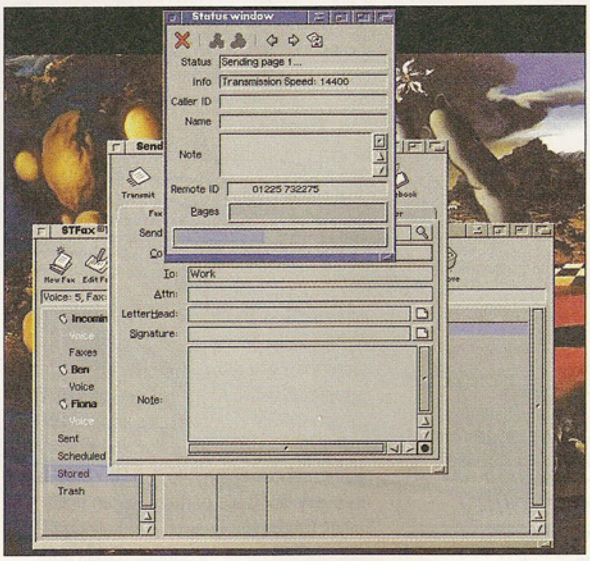
Ben Vost gives *STFax* a hearty welcome back to the pages of *AF*...

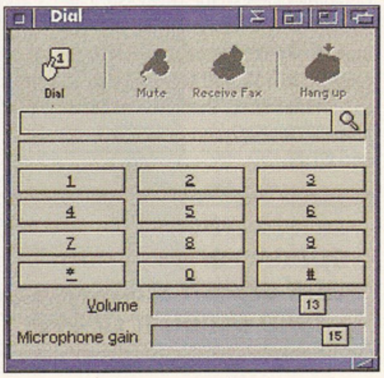
AMIGA GOLD FORMAT

You may remember that back in *AF110*, I gave *STFax 3* a very favourable review. In my comments I stated that *STFax 3* was the bees knees and nothing came close to it for features and reliability. That much was certainly true, although *STFax* wasn't as amazingly reliable as all that especially if you'd received a fax, as it took a long time to recover – certainly too long if there was a follow-up call coming through afterwards. The feature set may have been happily locked at version 3.0, but the program did need some bug fixes and updates to make sure it ran perfectly on everybody's system. However, version 4 has been running on my machine now non-stop for more than a week, and has been dealing with phone calls and faxes alike with equanimity. To say that it has been reliable is an understatement, it's been incredibly useful to a busy editor of a successful magazine – it even came in handy for me!

One of the best features of the new version just has to be the dulcet tones of a professional voice artist that Active have made use of to get really top-notch messages. You've never sounded as sweet on the other end of the phone when asking someone to leave a message after the beep – that's for sure. Since most of the messages are geared more towards an Amiga-running business than home use, there are no whacky answerphone messages to liven up the professional, but impersonal female-voiced ones, so you'll probably still find yourself singing along to De La Soul to alert people to the possibility of leaving a message for you.

> **There are no whacky answerphone messages on offer so you'll probably find yourself singing that old De La Soul number as a greeting**





STFax is equally at home sending or receiving faxes or acting as a speakerphone.

AF PHONE HOME

One of the nicest features of *STFax* has to be its remote access facility. With this you can ring into your home phone, hit a button on your phone's keypad and be in the remote access menu. At this point, you'll be asked which voice box you wish to listen to, or you can receive your faxes on the line you're using (presuming it's attached to a fax machine at your end). Regardless of which you choose, *STFax* will then ask you, in that professional voice, for a password to access your messages or faxes, and proceed to play back all your new messages for you. You can access this facility from anywhere in the world, making your answerphone a real nexus of operations.

A MAZE IN MESSAGES

The pioneering tree scripting that *STFax* introduced in the previous version remains, although it has been streamlined somewhat, and user greetings can be used if your modem supports UK caller ID to give personalised answerphone messages to your loved ones. Your voicemail system can be as simple as an answerphone or as gargantuan as some 1984-style endless loop for the user to get lost in – I don't doubt that someone, somewhere will make use of *STFax*'s scripting feature to make a telephone adventure game.

GOING IT ALONE

One of the finest accompaniments to *STFax* in the modem world has to be Pace's Solo. Unfortunately, Pace went into receivership not long ago, so your chance to snap one of these great modems up will rapidly disappear. Both it, and the standard 56K modem that Pace produced, offered UK caller ID – something that no other modem currently does, and the Solo had a wealth of features all of its own that *STFax* happily took advantage of.

Just so you know, you can leave *STFax* running and it'll take care of the incoming line for you, or you can leave the Solo to get on with it, using its independent operation mode (although then it can't use your voicemail script). The follow me function works with *STFax* and you can even set it from within the program rather than having to remember which button on the Solo corresponds to which number. You can use the Solo, or indeed any modem that supports voice functions, as a speakerphone, allowing you to use the modem's speaker as the earpiece of your techno-phone, and its mike as your mouthpiece. The Solo also allows you to screen calls by turning on its speaker so you can hear incoming messages.

Even if these modems don't have manufacturer's warranty, or any further upgrades, it really doesn't matter as they are some of the finest modems known to the world. Honest. Get one if you can.



FREE TICKETS FOR TV SHOWS!

JOIN THE AUDIENCE OR BE A PARTICIPANT - FAME FOR 15 MINUTES !

- The PEPSI Chart Show
- TFI Friday
- Dinner Ladies
- Who wants to be a Millionaire?
- The National Lottery Draw
- Stars in their Eyes
- Top of the Pops
- University Challenge
- This is Your Life
- You've been framed
- Generation Game
- TRISHA
- Catch Phrase
- *Other TV Shows*
- *Radio Shows*

Please dial 09060 123124 from your fax machine

Press the start button when you hear the fax tone, we will automatically faxback to you the full details

NEW YORK £130 RETURN !

HOW TO FLY TO MAJOR WORLD CITIES WITH MAJOR AIRLINES AT LESS THAN HALF THE ECONOMY FARE ...

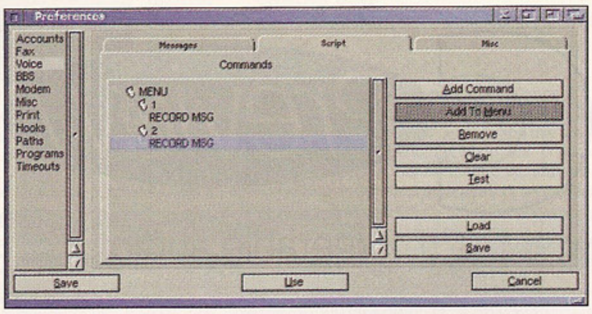
- San Francisco £170 return !
- Tokyo £332 return !
- Miami £150 return and many other destinations !

Please dial 09060 123140 from your fax machine

Press the start button when you hear the fax tone, we will automatically faxback to you the full details

Should you experience any difficulties with the automated service, then please fax this form back to us on 09060 111344, with your name and fax number, clearly marking the service that you want. We will then send you the information manually. Please allow 24 hours for our manual faxback. One call to an 09060 number gives you hundreds of pounds of in depth research for £1/min! The faxbacks are 2/4 pages long and take from five to nine minutes. Second Telecom, 29-30 Margaret St, London W1N 7LB (Tel: 0171 481 1617)

Get all those lovely junk faxes – at least you don't have to waste paper on them.



Your voicemail system can be as simple or complex as you like because you choose how many messages there are.

The scripting feature alone is worth the price for *STFax*. Not only can it be used to create a labyrinthine voicemail system if you're feeling that nasty, but also a fax-on-demand system similar to the one that we dropped because very few people were willing to spend that kind of money receiving a fax over a premium rate line.

> *If you have an Amiga-based company it'll make your organisation seem truly professional no matter how back bedroom-based you are*

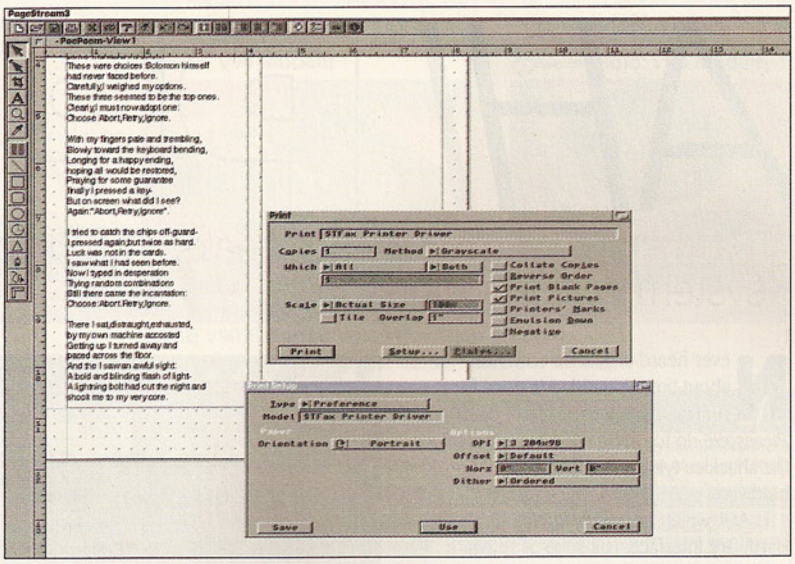
FAXING LYRICAL

Staying on the fax side of things, *STFax* is now much faster at decoding faxes than it ever was, and the display seems better too, although that might just be wishful thinking on my part. You have options to twist, turn, scale and flip your faxes so they look as good as possible on your screen, and creating a new fax is also a pretty simple task, whether you want to scan a page in using *STFax*'s communications with the superb *ScanQuix*, or simply type or load text and/or an image or two. You can set up fax header pages and signatures that are unique to particular fax destinations – you probably don't want to use the same header for your mum as for your best mate, for instance.

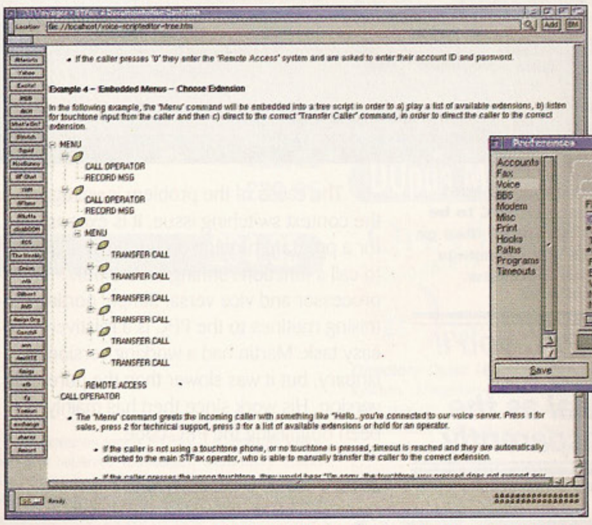
The main thing that comes across in using *STFax* is the fact that it's a good product made better with careful thought given to the feature list and usability of the product. Having the ability to use custom greeting messages for particular callers, or to use specific fax headers for them is great, and something that previously you would have had to consider yourself, only to find you'd sent the wrong header to the wrong person, or that not everyone is amused by your Derek and Clive impressions on your answerphone. It's also nice for people that don't necessarily know what the system is to hear your friendly voice at the other end of the line telling them what to do next rather than just the standard one. It's the little touches, like the ability to have your script for a message sitting in front of you on the screen when you're recording which really count, and show that real effort has been put into this new release.

BBS ZONE

***STFax*'s BBS system isn't going to give MAXs a run for its money, but then it's only there as a simple addition to *STFax*'s abilities. Essentially, it allows you to offer data facilities on the same number you're also providing a fax facility and a voicemail system on. You can use it to provide updates to software you've written, or act as a collection point for people sending stuff in to you.**



Any application can create a fax using STFax's printer driver. Here's PageStream 3 writing a poem to fax to someone.

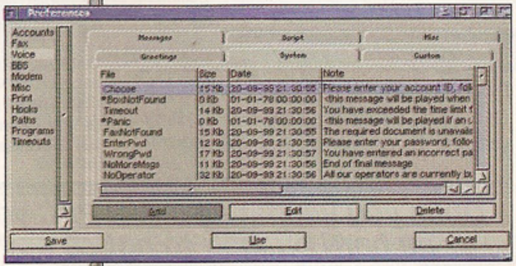


The docs for STFax are very comprehensive, but you might not notice them at first since they aren't called with the Help key.

BUSINESS OR PLEASURE

Where next for *STFax*? It seems strange to me that areas which were always considered Amiga strengths, like video, are practically devoid of development these days, while areas that the original troika of designers never even considered are its strongest points – you could literally run a company's switchboard with *STFax*, including offering a BBS for data callers if you wanted.

STFax is pretty damned near complete, I couldn't really find anything missing that I wanted or needed with one exception, which is that you can only have one personalised greeting per person in the phonebook. I expect that will be changed in an upcoming revision in the near future, but until then, and disregarding my weird personal requirements for the product, do get this piece of software. If you have an Amiga-based company, it'll make your organisation seem truly professional no matter how singlehanded and back bedroom-based you are. If you're a family man, or woman, get it and have separate voicemail boxes for the whole family, just so you don't have to listen to a message all about Justine, what she did, who she's going out with, what she wore and so on. Even if you're a single person, living all on your own, in a bedsit, in Croydon, get it. You never know, all sorts of people might start ringing you just because your answerphone system is sooo cool...



The range of samples that come with STFax is very comprehensive.

SUPPLIER: Active Technologies (01325) 460116
PRICE: £34.95, UPGRADE: £19.95
REQUIREMENTS: Hard disk, voice modem and CD-ROM drive

Pros and Cons

- \+ Even does stuff you hadn't thought of
- \+ Professional messages
- \+ Tree scripting
- \+ Solo support

OVERALL VERDICT: Simply superb.

95%

AHI PPC Preview

Richard Drummond sneaks a quick look at the retargetable audio system with PPC support

Never heard of *AHI* before? Then it's about time you did. *AHI* does for Amiga sound what *CyberGraphX* and *Picasso96* do for Amiga graphics: it breaks the shackles tying it to the custom hardware.

AHI, which nominally stands for Audio Hardware Interface, is a suite of software which provides programs with a hardware-independent interface for the generation of sound – whether music, sound-effects or whatever. Drivers are supplied for all the common Amiga soundcards – the Toccata, the Prelude, the Concierto, etc, – and also for the native Paula audio.

SPREADING THE LOAD

While *AHI* is an incredibly flexible system, it does require a lot of CPU time. For example, Amiga *Quake* supports *AHI* for its sound replay, but if you select it then the game's sound effects tend to lag behind the events which cause them. The signal processing algorithms that *AHI* uses to mix all the audio streams together mainly requires pure number crunching, so it's an ideal job to offload onto your PPC coprocessor. Martin Blom, the author of *AHI*, has been working on the PPC version since the end of last year, but it's not been an easy job. On April Fool's day this year, he put a notice up on his webpage saying that he had been forced to give up writing software because the strain had affected his mental health.

> **Once you've installed AHI PPC you'll be hard pushed to notice any difference from the original as the PowerPC part works transparently**



If you can't wait for AHI PPC to be distributed then go to the homepage for a preview.

The cause of the problem is yet again the context switching issue. It is expensive for a program running on the PowerPC chip to call a function running on the 68K processor and vice versa. Simply porting the mixing routines to the PPC is a relatively easy task. Martin had a working version in January, but it was slower than the pure 68K version. His work since then has mainly been optimising the PPC code.

ANY DIFFERENCE?

Once you've downloaded and installed *AHI PPC*, you'll be hard pushed to notice any difference from the original, cosmetically at least. The PowerPC part of the system works transparently. The *AHI* prefs program and the AUDIO: device function just as they used to.

It is worth pointing out, however, that *AHI PPC* is not complete yet – it is a beta version after all. I couldn't get the prefs program to recognise the driver for my Prelude card at all – although with a bit of fudging it was possible to get *AHI* to output to it. The only other problem I had was that it refused to work with any software that used the PPC for decoding sound. For example, both *AmigaAMP* and *SoftCinema* crashed the system when trying to output with *AHI PPC*.

The big question, then, is *AHI PPC* any good? In terms of sound quality I certainly cannot tell any difference from the original. As for efficiency, it's hard to tell. I have yet to work out a foolproof way of benchmarking the system. Comparing system loads on the 68K side of the system reveals little change. When playing games that use the *AHI* system for their sound effects, there seems to be no increase in frame rate – you would expect a few extra frames per second if there more CPU cycles to spare. *Quake*'s effects still seem rather laggardly.

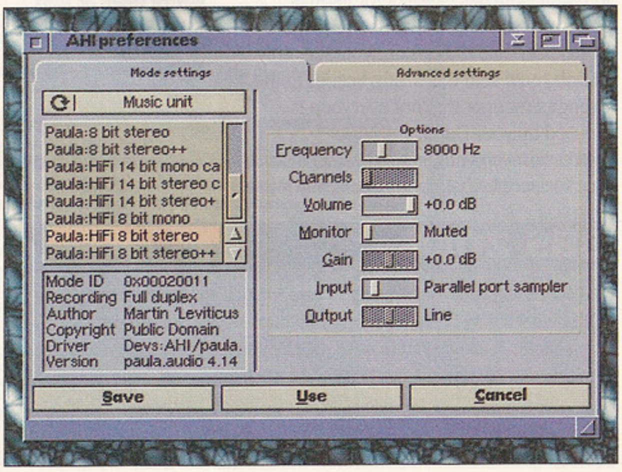
CLAIMING YOUR BENEFITS

In the week or so that I've been messing about with this preview of *AHI PPC*, I really have to say that I noticed little benefit from running this version over the pure 68K release. Maybe, it's just me. But I did expect see a notable difference. Still, I definitely think Martin Blom is on the right track. *AHI*, whether running on two CPUs or just one, is an indispensable addition to your Amiga. Perhaps with more development it can make better use of the PowerPC.

GETTING IT

AHI PPC is currently only available from the AHI homepage at http://www.lysator.liu.se/~ics/ahi_ppc.html; because of its preview status, it is not generally distributable yet. No installation scripts are provided, so you have to install the thing by hand. But this is not great chore. The important parts of the package are a new AHI device driver and the PowerPC module; these get copied into your DEVS: drawer. AHI works as per usual, but if the PowerPC module is available it gets used in preference to the standard code.

The system currently works only under PowerUP, and release 46.24 or better of the ppc.library is required to use it. Currently there is no WarpUp version and is not compatible with the WarpUp ppc.library emulation. WarpUp support is planned for the final release, however.



The preferences look and act exactly as they do in the original.



Workbench

On the CD -In the Mag-/Workbench

Simon Goodwin dispenses balm to hapless *AF* readers

Email: amformat@futurenet.co.uk, putting Workbench in the subject line, or write to: Workbench • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW.

KICKSTARTS

Every time I use the *Amiga Format* CD, I have to open up my Amiga and put in the 3.0 ROM chips. Why is it, when you put it on boot options screen on the Workbench 3.0 version and 3.0 ROM chips, that you see a device called CC0 Priority 3 ADOS Carddisk-0, yet when I put Workbench 3.1 & 3.1 ROM chips in there is no such device?

Can you tell me why the above device was not written into the 3.1 ROM chips, because without it I can't use the *AFCD*, and I have to open up the Amiga and put in the 3.0 chips? I have removed the fast RAM when using the 3.1 version and it still doesn't work, although it works on version 3.0 with the Fast RAM still connected.

I found that when you use the 3.0 version and run the install disk that came with the CD-ROM drive, and click on the CD^{32} Icon, then the Preferences window, a carddisk.device appears there, yet when I use the 3.1 version and install in the same way, the device does not appear. Is there another way of using a CD-ROM drive with my A1200 without using the Squirrel SCSI interface in the PCMCIA slot?

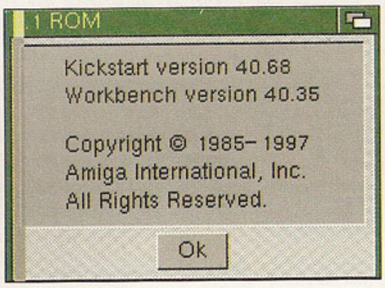
Raffi Khan
Birmingham

Taking the last point first, there are loads of ways to use a CD-ROM without a Squirrel – Power's Typhoon and phase 5 Blizzard expansion units have SCSI options, and you can connect ATAPI drives to the motherboard port, or a buffered IDE adaptor. But your Squirrel nearly works, so let's concentrate on that.

The lack of CC0 in your Kickstart 3.1 is weird, and suggests you might have the wrong ROM chips. 32-bit Amigas need a pair of ROMs, contributing 16 bits each. You can check the ROM version by pressing three adjacent keys: Right Amiga, Shift and Slash – on Workbench, or selecting the Workbench/About menu.

The correct Kickstart 3.1 ROM for an A1200 is version 40.68, although I've got that in my desktop A4000 and it's working fine there too. The IDE code in the bogus 'scsi.device' works with both interface mappings. Strictly speaking an A4000 should have version 40.70, which includes extra code for the 4000T on-board SCSI controller.

Only Kickstart 3.1 release 40.68 contains the PCMCIA card resource for CC0: – this explains its absence from your startup screen. To check the hardware, run PrepCard (in SYS:Tools) – if the interface is not found, a requester reports 'No card slot.'



The 'About...' menu item identifies A1200 Workbench 3.1.

The other potential problem with Squirrels and AFCDs, among others, is that Commodore's CD0: driver is very limited – it was written for the CDTV and CD^{32}, and never extended for the directory structure of modern CD-ROMs. This is why HiSoft ship the excellent freeware AmiCDFS on the PD disk – the official Commodore one gives CD^{32} compatibility, while AmiCDFS copes with modern format variations, including Macintosh HFS.

To get the best of both worlds, install the Commodore driver as CD0: and rename the AmiCDFS drive icon to something distinct like AmiCD0:. Then you can access either set of features on a single drive simply by specifying the appropriate name. This works in the same way that you might have PC0: and DF0: icons on Workbench, and choose the one that matches your floppy disk format.

DISK SALVATION

I have an A1200 recently upgraded with a 260 MB hard disk and 8 MB memory, and a 24x CD-ROM. Taking *AF*'s advice to use a virus checker, I attempted to install Virus Checker II on my hard drive. I followed the instructions and tried to install on HD1. I got the message "unpacking" on screen and the floppy drive light came on and stayed on. I could detect no sound or movement from the drive and, thinking it had stuck, I did a soft reboot and removed the floppy when the light went out.

When the computer came back on I found HD1 and the Work drawer were no longer usable. The icon HD1:NDOS was displayed. Any attempt to use it brings up the message "HD1: Not a dos disk". How do I get round this? I feel that I should have left the virus checker floppy working for a bit longer but I had no idea it would take so long to unpack. Or perhaps the floppy I used contained a virus. What do you think?

I also get the system request "please insert volume Work in any drive' but I don't have a volume 'work'. I also get the message "CDROM handler. Cannot open ATAPI device unit 3." What does this require me to do? Plus, when quitting Workbench, I get: "Cannot quit yet, open count 1" etc. The Close instruction on the

BINHEX DECODER?

Is there a program to make a picture emailed to me readable? I assume it has mac-binhex40 compression.

Andrew Petley

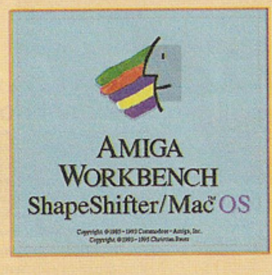
BinHex is a Mac variant of Unix UUEncoding or MIME's base64 text format for binary. It should tell you in literal text at the start, if it's genuine BinHex, and what version to expect, so there's no need to assume anything. Typical BinHex has CR LF pairs as the 65th and 66th character in each text line. These are character codes 13 and 10, where Amigas use only 10, Macs use 13, and PCs expect both.

In a Mac emulator like Fusion and Shapeshifter I'd use Stuffit-Expander, which is shareware and very easy to use – just drop the HQX file icon onto the program – and then convert it if necessary with Graphic Converter, Mac shareware that should cope with any Apple formats.

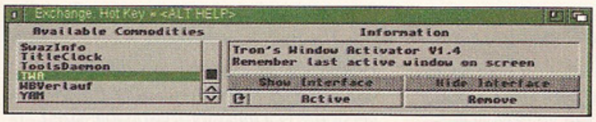
Failing that, I'd use a Shell command to decode the file. There are seven on Aminet, and AFCD46 – including four, bizarrely, for PowerPCs – but they have odd syntax and lack GUIs, typified by the Unix MCVERT. Mac files comprise two parts, data and resource, so to extract both 'fork' of Mystery.hqx Io RAM I'd use:

```
BHD data=ram:part1 res=ram:part2
Mystery.hqx
```

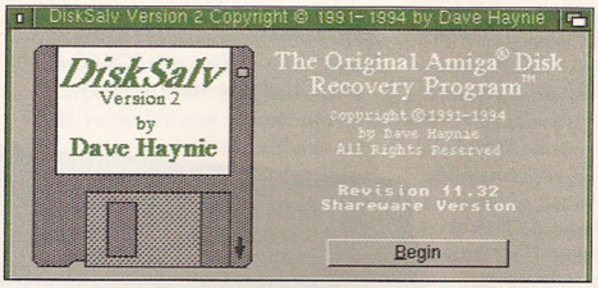
After decoding use datatypes, VT or Superview to examine the result. It's easier with an emulator, as the file inside might be packed in some Mac technique. The Amiga ports of UNSIT and UNSEA might help, but some Mac proprietary packing baffles them. MacView can convert original MacPaint mono graphics into IFF ILBM, and Mac picture datatypes appear in our CD's Workbench/MacVert drawer and elsewhere.



Emulation is the most versatile way to convert Mac files on an Amiga.



Sys:Tools/Commodities/Exchange lets you quit well-behaved WBStartup programs if you're determined to shut down Workbench.



DiskSalv is an invaluable component of any Amiga system you need to rely upon.

menu bar is ghosted so I can't use that.

Mr D Barugh
Middlesborough

Run DISKSALV 2 from any AFCD System/Tools/disk_tools drawer to bring back your WORK: partition on HD1:, which was clobbered when you reset the system in the middle of a write. This should restore most, if not all, the files but if it doesn't you'll need to restore your backup copy. If you haven't got a backup copy, you were living on borrowed time, and it's run out...

It's not clear why the virus checker got stuck, but it could be something as simple as a spike of mains or wireless interference. If Virus Checker usually did that we would certainly not recommend it!

The request for Volume Work: should be cured when you restore the partition. If DISKSALV has a lot of trouble 'repairing' it, you might need to rename the icon to Work: from the silly name (wanagi-wachipi) Dave Haynie assigns if he can't find the old one. I guess unit 3 on your IDE interface is not found because you installed the ATAPI port expansion code on the missing partition.

The problem with quitting Workbench is that you have run a program from Workbench – often from the WBStartup drawer – and Workbench is waiting for a message from its 'child', before it can quit. You can unload properly-written programs of this type using the Commodities control panel (normally in sys:tools/commodities), but some persist until you reboot.

It's not wise to quit Workbench, anyway – it would just stop you using the Amiga's built-in graphical user interface for files and directories. The option was intended for programmers who wanted to free the last few K on a small machine, and has been obsolete since Workbench 3.

POWER FAULT

I have a SX-32 Pro system with 8MB RAM plus the usual peripherals. After about 45-60 minutes of use my system crashes. I think it's a heating problem with the power supply or the box. If it is the stock power supply, could I wire the output of another power supply in parallel with the one I have? I can't find any Bigfoots listed anywhere.

Phil Walte
via email

That does sound like a PSU overload. It's unwise to wire two power supplies as you propose, though you might dedicate one for drives and another for the computer. Memory, processor, graphics and sound all need one supply or you'll risk interference loops and regulation instability. If you need to ask how, don't try this.

If you can't get a Bigfoot you can make one easily enough by connecting your Amiga power lead to a cheap 200 watt PC power supply. The Bigfoot puts that in a nice metal box, but you can get a PC tower and PSU for less, these days. Power adaptor instructions are on AFCD46.

Feedback

In the September issue of *AF*, Harry Gill complained about running out of memory when using his scanner. I am very pleased with my scanner but found I had the same problem. It is a Umax Astra 610S from Eyetech with Photoscope software. I have a similar set up to Harry Gill with an Apollo '40/40, 16MB and a Squirrel SCSI interface. After each scan I couldn't do another one without re-booting or I got the message "not enough memory". I notice from the Eyetech advert that Photoscope and ScanQuix software are written by the same author and hence may suffer from the same problem.

While trying out the excellent StartMenu by John Corigiliano, from Subscribers' Superdisk 127, I installed MemMeter. This showed that after doing a scan and quitting Photoscope my total memory had dropped from 15MB to 8.3MB and would not come back. I searched my *AFCDs* and came across a very neat little program called TaskersFlush v2.4 by Nicolas Salin in AFCD41: Serious/WB which I installed in my WBStartup drawer. This releases the memory shortly after quitting Photoscope, as MemMeter shows. However, the software still says "not enough memory". The answer is to install PoolMem by Thomas Richter from AFCD43: Serious/Misc which releases the vital bit from the application all by itself. Both programs are required.

Alistair R Milne
Tyne & Wear

We've collected these programs on AFCD46, in Workbench/ScanFix. Thanks, Alistair!

DOS TYPES

Where can I find information about the DosTypes field in DosDrivers:, such as how to understand and make your own? I would like to make a 1581-compatible driver to read and write 3.5" disks from the C64. How do I understand this?

Example from DiskSpare device distribution:

```
/* 984KB disk mount entry */
Device = diskspare.device
(...)
DosType = 0x444F5301
```

I tried several documents but most of them don't talk about the construction of the DosType field; they just say it exists.

Phillipe Dumont
Belgium

The DosType is a four character identifier which uniquely identifies the format. It's written in hex as some of the characters can't be typed. The 0x prefix indicates base 16 or hexadecimal, and 44 is the ANSI code for "D", "4F" is the code for "O" and you might not be too surprised to find that "53" is the code for "S". The 01 is the version. By convention "0x444F5300" is the code for the original Amiga file system on Kickstart 1, known as OFS, and later versions increment the last byte to signify Fast File System, Directory Caching, International FFS, and so on. So DiskSpare uses the same code as Amiga FFS disks.

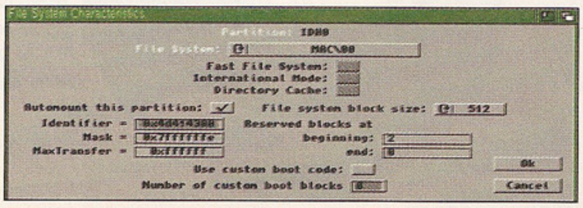
The value is up to the writer of the device, so you don't make one up unless you're writing a device. Otherwise, you just copy the supplied mountlist or documentation. For instance CDFileSystem uses "0x43443031", which is the ANSI code for the text "CD01". There's no user documentation because the value is meaningless, except by convention and to match up disks with software handlers and devices. You use the Advanced Options of HDToolbox to set the DosType of a partition, so the AmigaOS, Unix or Mac emulation knows what software to use to access it.

There are utilities to read 800K Commodore 1581 disks on Aminet and supplied with the CatWeasel disk controller. Copy1581f and the C1581 filesystem are on the AFCD.

IDEFIX CD32

I've been having problems with IDEFIX 97 whilst trying to make a bootable CD32 emulator floppy disk. When I try to create a disk, I always get the messages 'cannot open SCSI.device unit 3' and 'CD0 is not mounted' when trying to boot from the floppy. My Workbench recognises CD0 when I create the installation disk so what's the problem? My A1200 has 2MB chip RAM, 4MB fast RAM, a 6xCD-ROM and 170MB hard disk.

Alex Gabb
Birmingham

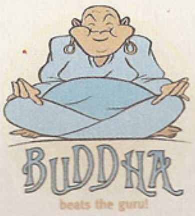


HDToolbox lets you give partitions specific DOStypes.

Continued overleaf ➡

You must specify exactly the right device name and unit (drive number on the interface) or the Amiga won't find the drive. For a start, "scsi.device" must be in lower case; I know SCSI is an acronym (for Small Computer System Interface, fact fans) and thus deserves CAPITALS, but the device naming scheme was invented before SCSI, and uses exact matching for speed.

If you used the IDEFIX installer you could pick the name from a list and would not need to retype it. Unit 3 is only available if you have an IDE port splitter, which you don't list in your hardware. Standard internal interface units are numbered 0 and 1, for master and slave, and port extensions are units 2 and 3. So the unit number suggests the drive is configured as slave on the secondary port. If it works from the hard disk, but not from a floppy the device and unit are right for Workbench (in Devs/DosDrivers) so make the CD0 setup on the floppy match, and it should work.



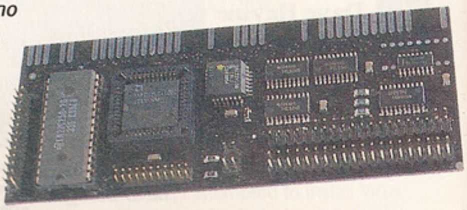
ZIP IT

I own an Amiga 2000 with 8MB RAM and no CD. Can I hook up a 100MB Iomega Zip parallel drive to it to use it as a hard disk? I have tons of games I'd like to play again… I had a SCSI Quantum 48MB hard disk but that has since crashed. I also have an old 128MB IDE hard disk I could use. Where can I get a IDE controller? Should I just go with the Zip drive? Where can I get the driver? Is there a Zip tool package for the Amiga?

Mike Piano
USA

You need an adaptor for the parallel Zip drive, or an IDE Zip drive with Buddha. There's no need for special software – the Workbench HDToolbox will format Zips for your own use, even to boot from. There are several collections of free tools on Aminet to protect drives and convert between PC, Mac and Amiga formats, but these are just custom Zip frills.

The Buddha would also accommodate your IDE drive, although you might need a modern Kickstart ROM for your A2000 – version 2 is a must for reasonable-sized partitions, with 3.1 preferred for future upgrades. Ideally you should use a SCSI interface, as your A2000 was designed for Zorro II DMA. A secondhand A2091 should be ideal for you, along with SCSI CD-ROM – an old Apple one would do nicely.



The Buddha card will allow the use of IDE drives and CD-ROMs with an Amiga 2000.

THE BARE NECESSITIES

I have just purchased a secondhand Amiga 1200 with an old Epson MX printer and an external floppy drive. I wish to upgrade the computer and need sound advice.

In a few weeks time I want to purchase a CD-ROM drive, but I have been informed that a 1.1 GB hard disk would be a wise investment, saving the hassle of installing to floppy disk if I bought a CD-ROM drive on its own. I was quite happy with this until I was also informed that to get a hard disk of any size would mean that I also need a memory expansion board (trapdoor fitting) of up to 6MB. Then I was informed that a Viper '030 accelerator card is the first thing I should purchase.

Being new to the Amiga scene, all this is getting a bit puzzling. Is all this equipment necessary, just because I want a CD-ROM drive? If so, should I start from the accelerator card and work up?

I am also experiencing trouble when trying to make back-up copies, or just trying to format a disk. I have been using Workbench 3.0 and selecting the Shell command for copying, and the format option to format a disk. Every time I have tried to format, the 'disk is write-protected' request appears. This is despite making sure that disks are write-enabled.

After formatting, the same request appears or says 'cannot initialise disk', or sometimes states that suddenly the disk is NDOS and I cannot use the disk any more. When copying on a successfully formatted disk, after asking for the destination disk, it states that's write-protected. This is despite ensuring that the disk is write-enabled. All disks that are being used for copying and formatting are DOS disks.

Mr C Jones
Gainsborough

The advice is good, but you can take smaller steps. Your existing system is very limited, by modern standards, and I think the person who sold it to you might have mislead you, too. You're going to struggle to use the CD-ROM without a hard disk, but anything – even 20MB – will make a big difference. An Amiga is crippled without one, but a gigabyte one just gives you a big backup challenge.

You'll need a hard disk as soon as possible – it will save you lots of time swapping floppies – and an accelerator will allow you to run more software, faster. I'd get the disk first, then the CD, then the accelerator, but they all work together synergistically – your adviser is right to suggest that you need all three to get the best from your Amiga, but you don't need to buy all at once. Accelerators are so cheap now that memory-only boards, which limit further expansion, are often false economy.

You don't absolutely need memory expansion but the memory in the A1200 is slow and small by modern standards. Your problem is that the minimal A1200 set-up dates back to 1992, when it was designed as a floppy games console, and basis for expansion. The MX80 printer design is solid but almost 20 years old; mine still works, but it's awful compared with a £100 modern inkjet. If you paid more than £100 for the lot, you were ripped off.

As regards disk copying, you can copy and format disks with Workbench and don't need to use Shell commands. Just click on the disk you want to copy, put another disk in the other drive, and drag the image of the disk you want to copy onto the icon for the other drive. Commodore should have explained this better in the Workbench 3 manual, but perhaps they thought it obvious. The system will prompt you to copy the whole lot, formatting as it goes along. If you had a hard disk you could then carry on using the system during the copying…

It sounds as if you've got a damaged drive. The write-protection is detected by a switch or light just behind the door. Check that it's not clogged. Writing is more tricky than reading, so if you get an error copying from DF0: to DF1:, swap the disks and try them the other way round.



That's him officer – the dodgy geezer who flogs you a keyboard and 'invisible' monitor.

A3000 QUERIES

Where can I obtain the resistor packs which plug into the RP 802-804 connectors of my A3000 motherboard? I'm considering add-on cards but the slots aren't specifically labelled so I'm not sure which slot is for Zorro, video, processor etc.

My internal SCSI hard disk (unit 6) is working fine. However, I can't get my external Reno CD-ROM drive to work. I've loaded the correct software, tried several different settings and software solutions but each time I run a utility to access the CD the drive accesses and the program hangs temporarily at the unit number the CD is set to, but in the end it just reports 'Drive not found' or something similar. I am sure that it's a termination problem and I'm worried I'll have a tough time obtaining the resistor packs for the motherboard. I am also going to try a new internal hard disk which has a termination jumper built-in. Might this help?

If all my efforts to fix my external SCSI fail, I'll consider the Flash Buddha for my Zorro slot. Could I fit an internal Zip or new Orb drive where the second floppy drive would normally go, or would it be best to run IDE cables out to a separate case housing a CD, Zip or Orb drive?

The internal battery on my motherboard was carelessly removed for fear of further leakage. However, the Flash Buddha has a clock port doesn't it? Do you have any other recommendation to replace my internal battery so I don't have to send my motherboard in for professional work?

Currently I have Kickstart 2.0 which is used only to boot Kickstart 3.0 and I use WB 3.1. I'm impressed about *Directory Opus Magellan* and was considering it, but was wondering if I might be better off getting a Kickstart 3.1 ROM and the new WB 3.1 OS, as I've heard it will feature easy web connection as well as give me all the features I currently have thanks to many add-ons and hacks. I would also save memory by not having to softboot my Kickstart and be supporting Amiga.

Rob Daviau
Canada

Passive SCSI terminators are obsolete but still available from many electronics and computing suppliers. Amiga specialists like Amiga International in Germany or Paxtron in New York know the required type. The cheapest thing is to pull them from old drives. Amiga ones are quite standard, for eight-pins, although some use other types.

They have the midpoint of 220 and 330 ohm resistor pairs connected to each of six lines, on pins 2 to 7, with pin 1 pulled up to +5 volts, via the 220 ohm resistors, and pin 8 pulled down to 0 volts via the 330 ohm ones. They work by holding the voltage on the line midway between 0 and 1, so it can swing either way. If all else fails you can always create these with a dozen discrete resistors.

You might have trouble getting the Zip to fit the A3000 front panel, which was made for specific floppy drives. The cramped desktop A3000 case is hard to expand, which is why Commodore made the A3000T. External IDE cables should be kept very short – 18 inches at most. I'd go for SCSI, as SCSI Zip drives work much better, especially with an A3000s built-in 32-bit DMA controller.

Your four Zorro slots work identically with any Zorro II or Zorro III card, but only one has an adjoining 12-bit video slot. The other slots are ISA ones, useless without a PC bridgeboard. Zorro III cards need Buster Rev. 11 on the A3000 motherboard for full functionality.

You need termination at both ends of a SCSI chain, but it sounds as if you're running without any! This may work with a short cable to an internal drive, but I'm not surprised the external CD drive objects. If you can't terminate both ends, one or two sets of termination anywhere may help, but it's not the right way to do it.

The Flash Buddha clock port is not intended for clocks but for A1200 peripherals. It's a socket, not a clock, and A1200 clock units are rare and might need software tweaks as the Buddha port is not at the usual A1200 address. You might be able to get a parallel port clock device, which would be easier to get working, but I'd recommend that you replace the battery.

The A3000 circuit specifies a 3.6 volt 60 mA/hour NiCd (Nickel Cadmium) rechargeable battery. A slightly different mA/hour rating is not a problem, but the voltage should be between three and four volts. Connect the positive terminal to pins 1 or 2, and negative to pin 3 of the socket. Hey, presto – a working internal clock!

Workbench 3.5, not 3.1, is the one with Internet support, and more besides. It requires Kickstart 3.1 ROMs. You should get it whether or not you buy Magellan, because it has many improvements over your old Kickstart 2 and lots of fine programs require at least Kickstart 3.

STARTUP MOANS

Thank you for your excellent Workbench queries column. I've had my A1200 for several years, but I'm still a novice when it comes to adjusting or tweaking the Workbench and startup files, so perhaps you could offer suggestions to a poor old 'wrinkly'.

When I switch on my machine it boots normally from my internal hard disk, but during its loading I get messages across the top of the screen like 'Can't find ?' or 'trying to load ?' or 'Can't run?', where ? is the title of what the machine can't find. The machine seems to work perfectly regardless of these messages, but they are much too fast for me to read or do anything about. I know that on my Spectrum, it was possible to insert a CHAR between each line in order to check the progress if you had a fault. Is there a method of 'pausing' the startup sequence so that a mouse click will move to the next line before activating it? I would like to find out what these messages are, so that I can correct it if there is a fault.

When my machine is booting up, I get a list of files and my CPU listing as it loads, prior to the Workbench screen coming up. One of the messages says "Can't find Amigaguide path" then carries on and boots the screen. How do I trace this fault and correct it? After my Workbench screen settles I get a small window which shows "Can't find required font". How do I sort that one out?

Mr AE Berryman
Northumberland

This is the sort of 'housekeeping' best done as you go along, rather than in a blitz all at once, but you can sort it out by working through the problems and rebooting periodically to test the changes. Most will involve lines added to the file 'user-startup' when programs were installed.

You need to look through the user-startup file, and perhaps startup-sequence, for references to the files that your system can't find. If these are part of the standard system, you might want to re-install a clean Workbench on a fresh partition, and copy the default files across. Otherwise, add semicolons before the lines that refer to add-on programs which are missing.

I gave general advice on editing startup files in my first Workbench column, in AF127. If you're not sure where to start, you can put commands like WAIT and ECHO in the file, to let you know how far it has got, and give you time to read the messages. For instance, add these lines in the middle of the file:

```
ECHO "Half way!"
WAIT 10 SECS
```

This displays a message then waits 10 seconds, or until you hit Control C to break the WAIT, returning a fail code of 5. All the error messages generated up to this point must be in the first half of the file, or caused by startup-sequence. Any subsequently must be in the second half of user-startup, or among the WBStartup icons, run when Workbench is loaded. You can use this technique to zero in on the problem lines.

SnoopDos on the AFCD can list each attempt to open a file as it occurs, with the name of the calling program. To investigate Workbench-launched programs, rename the WBStartup drawer and icon, and click on the icons individually after you've started Workbench and SnoopDos. If necessary, rename user-startup and run it manually with EXECUTE S:renamed-user-startup) from a shell after starting SnoopDOS.

As regards the missing font, you must have installed something – you don't hint at what, and anything could put up that message – that calls for a font that is not in the FONTS: directory. Find out what program is complaining, and re-configure it to use a font you do have, or copy the required font into the right place. This may happen if you add something to your system by copying the program icon, without running the installer to move other necessary files, which may not be obvious.

TV PRODUCTION

We are producing a television series and need to have a divided TV screen, with the lower 40 per cent of the screen scrolling through the television schedule and the top part of the screen containing our show, just like the TV Guide channel does, if you are familiar with that. Can the Amiga do this for us with the Video Toaster?

Ken via AOL
USA



A Genlock can output an integrated picture.

Any Amiga can do that with a simple Genlock – there's no need for a Video Toaster! The Genlock replaces one colour on the Amiga screen with the TV show, or anything else you feed into its video input, and outputs the combined Amiga and TV picture. All the rest is simple software.

There are lots of programs that scroll a 'slice' of text or graphics. Once again, the Amiga hardware does almost all the work for you. The Big Alternative Scroller is a popular commercial choice. But if you've got a Toaster, that should do the job too.

ADOBE FORMAT

Is there a utility or filetype available to allow Adobe PDF files to be viewed?

Barry Sampson
via email

Yes, it's been on AFCDs several times. We've written about 10 pages on this and related matters in recent months, but perhaps you missed them. Subscribers can feel smug at this point. You can use Ghostscript, XPDF or APDF. As we're nice, we've put the latest Ghostscript archives and installation instructions on AFCD46 in Workbench/PDF. AF

GOT A QUERY?

Make sure you submit them correctly:

- **Send email to amformat@futurenet.co.uk with the subject "Workbench".**
- **Send letters to the usual *AF* address and make sure you put "Workbench" on the envelope.**
- **Include details about your machine, such as what processor and how much RAM it has.**
- **Do your best to describe your problem succinctly.**
- **Make sure it wouldn't be easier to contact the dealer you bought the item from and ask them.**
- **Be concise!**

Creative

The complete beginners guide to... Workbench

Richard Drummond demystifies the Amiga desktop and unclouds Intuition

Surprising though it may seem, *Amiga Format* still gets many letters and calls from new Amiga users. These new users are buying secondhand machines, perhaps with no manuals, so they are not always aware of the things that the rest of us life-long enthusiasts take for granted.

Two issues ago we began a series of tutorials aimed at helping the novice Amiga user, our Complete Beginner's Guides. This time we turn our attention to the Workbench. How do you use the mouse properly, what are system gadgets for, and what can you do with icons? All will be answered.

We also have a new tutorial kicking off this issue and it's one that our readers have long requested: JavaScript. Now that we at last have three JavaScript-enabled browsers on the Amiga, what better time to begin.

CREATIVE INDEX

When readers 'phone up the *Amiga Format* office with queries, one thing that constantly amazes me is the number of them who still have not fully got to grips with Workbench, the Amiga's standard desktop environment. Here at *AF*, we plan to rectify that.

WHAT IS WORKBENCH?

Workbench is commonly used as a name for the whole of the Amiga's operating system, but it is really just one component of it. In actual fact, Workbench is just a program that can be run on your Amiga the same as any other. However, it usually gets

SYSTEM GADGETS

1 WINDOW TITLE: A text string identifying this window. Programs may use this to display other information, such as the name of a file currently being displayed within the window.

2 SCREEN TITLE: If no window is active on this screen, the screen's title will be displayed here. If there is an active window, the window may display its own message.

3 WINDOW DRAG BAR: Positioning the pointer on this area and dragging with the mouse will move the window around the screen.

4 SCREEN DRAG BAR: Positioning the pointer on this area and dragging with the mouse will move the screen around the view.

5 ZOOM GADGET: Windows can remember two sizes. Left-clicking on this gadget will alternate the window between the two sizes.

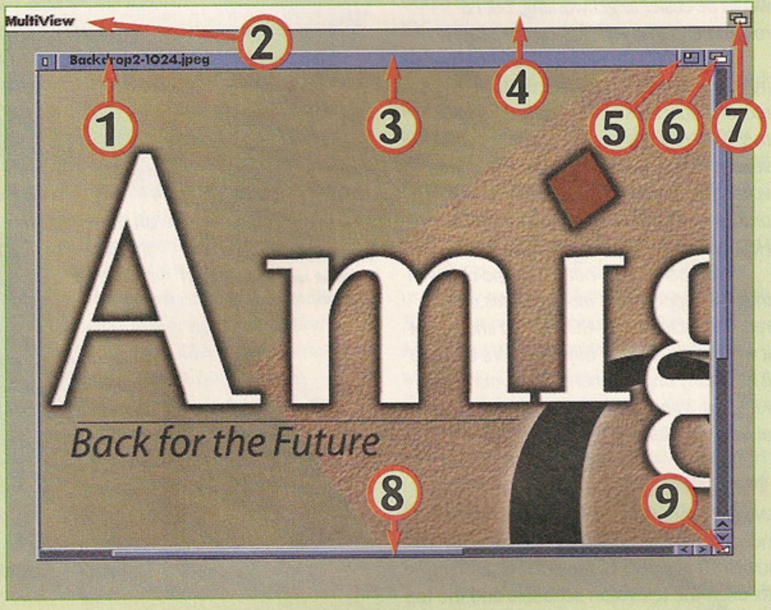
6 WINDOW DEPTH GADGET: A left-click will shuffle the depth arrangement of this window. If it's not the frontmost window it will be moved to the front; if it is already at the front it will be moved to the back.

7 SCREEN DEPTH GADGET: Left-clicking on this button will shuffle the depth arrangement of this screen. If it's not the frontmost screen it will be moved to the front; if it is already at the front it will be moved to the back. Clicking this gadget is known as screen-flipping.

8 SCROLL GADGET: If a window's contents is larger than the current window's size on screen, these gadgets will allow you to change the point of view, to select which portion of that larger area is currently visible. This gadget comes in two varieties: the horizontal one allows horizontal movement, the vertical one vertical movement.

The arrow shaped buttons can be left-clicked to move the point of view in small increments. The bar-shaped button allows faster movement and is known as a proportional gadget. The size of the solid part of the bar varies according to how much of the window's contents fits within the current window size; its position within the shaded area corresponds to the position of the visible part of the window within the larger window area. The solid bar can be dragged around inside the shaded area and hence the point of view moved correspondingly. Alternatively, the shaded areas themselves can be left-clicked to move the bar in steps equal to the bar's size and hence move the point of view in steps equal to the size of the visible portion of the window.

9 SIZING GADGET: Dragging this gadget allows the size of the window to be changed.



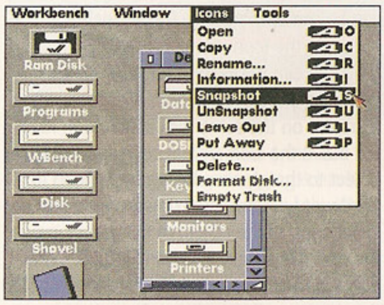
TOP TIP

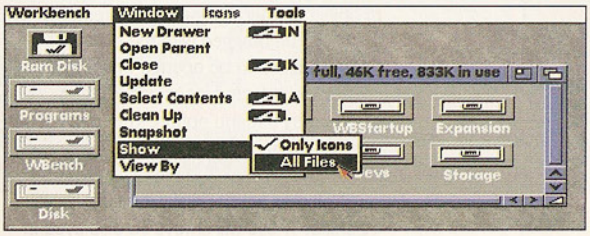
By default the Workbench root window is a normal window which can be depth arranged, sized and moved as per usual. Most people find it easier to use as a backdrop window - a window that always lies behind all other windows and fills the whole screen. This can achieved by selecting the Backdrop option from the Workbench menu and snapshotting the window.

Workbench is an example of what is known as a GUI (pronounced goo-ey); it was once known as a WIMP but that doesn't sound half as good

started automatically for you when you boot your machine.

The role that Workbench plays is to provide a visual environment for the manipulation of files, running of programs and general control of your Amiga's settings. The metaphor it employs is that of an office desktop (although this analogy is rather strained at times). All the objects stored on your computer are represented pictorially as icons. These icons – whether volumes, drawers or files – may be moved about on the desktop or opened with simple combinations of mouse movements and clicks. No complicated commands need to be learned like in previous text-only systems.





Left: Snapshotting an icon makes WB remember its position.
Above: Choosing to display both real and fake icons in a window.

Workbench is an example of what is known as a graphical user interface or GUI (pronounced goo-ey). This type of interface was once known as a WIMP (Windows, Icons, Menus and Pointers) system but the ubiquity of this type of interface has led to the term GUI being sufficient these days. The overall control of GUIs on the Amiga is the responsibility for a part of the operating system known as Intuition. Intuition is something like a window manager on other computers; programs that make use of it have a consistent style and may all be operated in a similar manner. It provides programs with and manages all the GUI elements, the windows, screens, gadgets, menus, and so on.

TOP TIP

You can speed up your every day use of Workbench by learning the menu shortcut keys.

THE GUI TOOLKIT

Windows are the rectangular areas on your Amiga's display where the action takes place. All communication with programs running on your system is made via these windows: this is where they print or draw their ouput and this is where you can type in data from the keyboard or operate any graphical controls, called gadgets, that a program may provide. The Amiga is multi-tasking. Many programs may be running at the same time, so there may be many windows open at one time. They may all produce output simultaneously, but only one window at a time can accept input from the user. This is known as the active window. The active window will generally be signified by a highlighted border surrounding it which will be blue by default. A window is made active by left-clicking anywhere inside it.

Windows can be likened to sheets of paper sitting on your desk. They can be stacked on top of one another, they can overlap, be moved around and their order shuffled. Where the paper analogy fails is that some windows will permit their size to changed by the user. And, just like windows of the glass variety, the world behind a GUI window can be larger than what is seen within its frame. However, the visible area of such a window is changed not by moving the observer but moving the world itself, an action known as scrolling. Windows that allow themselves to be moved, sized, shuffled or scrolled will generally provide special gadgets, called system gadgets, to do this (see box).

TOP TIP

If you have a basic Amiga, don't choose a Workbench screenmode with too many colours because it will use a lot of CHIP memory and slow the system down.

One innovation that the Amiga boasts over earlier WIMP systems is the concept of the screen. The complete display that an Amiga generates on a monitor or TV is known as a view and equivalent to the display of a conventional computer.

Know your rodent

The standard device for controlling the Amiga's pointer and manipulating GUI elements is the two button mouse. While this is a powerful device, some of the terminology concerning its usage may be confusing. Here's a brief run down.

LEFT-CLICK: The simplest and most common operation, a short press and release of the left mouse button. This can be used to activate a window, operate standard gadgets or select and highlight icons on the desktop.

DOUBLE-CLICK: Two left-clicks in quick succession. Mainly used to open icons on the desktop.

DRAG: This operation implies movement. Position the pointer over an object, hold down the left button and move the mouse. The final position will be accepted only when you let go of the button. Dragging can be applied to moving screens and windows, changing a window's size, operating scroll bars and moving icons to a new position on the desktop.

SHIFT-SELECT: This is used to simultaneously select a group of icons on the desktop. Left-click on the first icon you wish to choose, hold down the Shift key on the keyboard and then left-click on each of the other desired icons in turn.

DRAG-SELECT: Again, this is used to select multiple icons on the desktop. Start a drag operation in a Workbench window but not actually on an icon and a rectangle will be drawn on screen. On letting go of the left button, all icons within the rectangle will be selected.

MENU SELECT: The Amiga's pull down menus are visible only when the right mouse button is held down; the menu titles will appear in place of the active screen's title bar. A menu's options can be revealed – the menu pulled down – by positioning the pointer over its title while keeping the right button depressed. An option in that menu can then be highlighted by moving the pointer over it; the highlighted option will be selected when the right button is let go. Some menu options may pull down further sub-menus when highlighted – these can be operated in exactly the same manner. To cancel a menu without selection, move the pointer outside of the menu and release the right button.

Uniquely, the view can be divided into separate work areas called screens. These can be stacked and have their order

Continued overleaf ➡

DRAG AND DROP

Other programs beside Workbench may support dragging of icons onto their windows, a process known as drag and drop. This will generally supply the name of the icon's object as input to the program, but the action performed on the object is dependent on the program itself. Unfortunately, in current Workbench versions, there is no easy visual clue as to which windows will support drag and drop.

shuffled in in a manner similar to windows. A screen can even be rolled down the view like an upside down blind to reveal any screens underneath. This powerful feature permits the mixing of screens of differing sizes, resolutions and colours on a single view. Like windows, the contents of a screen may be much larger than simply the area that can be seen in the view. Such a screen can be scrolled about by moving the mouse pointer towards its edges.

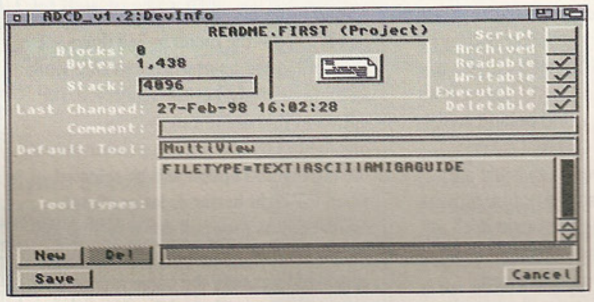
Another novel feature of the Amiga's GUI is hidden pull-down menus that appear only when the right mouse button is held down

TOP TIP

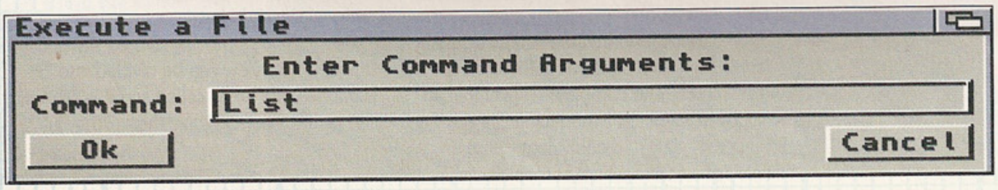
When you change the viewing mode of a Workench window, remember to use the update option afterwards for the change to take effect .

When you start up your Amiga, only one screen will be open. This is the default or Workbench screen, the place where Workbench and the majority of programs will display their windows. Other software may open additional screens for their own personal use. When many screens are available, the active screen is the one on which the active window is displayed.

The other novel feature of the Amiga's GUI is hidden pull-down menus. Other systems like the Macintosh have a bar at the top of the display where the menu titles are always visible. The Amiga has similar menus, but the menu titles appear and then become usable only when the right mouse button is held down (see Know Your Rodent). The currently available set of menus is defined by the program controlling the active window. Some programs may choose to define no menus, in which case the menu bar will be blank on pressing the right button. Other programs may interpret right clicks for their own purposes. Graphics packages such as *PPaint* are a good example of this. The menu bar appears only when right-clicking over the screen's title bar; right-clicking anywhere else will paint with the background colour.



Above: take control with the Information window
Below: run shell commands in the Execute window.



TOP TIP

A three button mouse comes in handy. The extra button can be used for operations such as Shift-selecting or screen flipping.

ALL ABOUT ICONS

Workbench classifies icons into four main types – volumes, drawers, tools and projects – representing the different types of object in your Amiga's file system. All icons can be dragged with the mouse, double-clicked to be opened or selected by a left-click; selected icons can then be acted on by a menu option. The result of all these operations, though, depends on the icon's type.

Volumes are the disks available to your machine. These will always be displayed in the root window, the first window that Workbench opens when it starts. Drawers represent the named branch points in the tree-like structure of a disk's contents. Drawers and volume behave similarly in that they are both containers. Opening a drawer or volume will open up a new window showing the contents at that level of the corresponding disk's tree. This mechansim allows the simple navigation through the levels of a disk's structure.

Icons are further typed as real or fake. Objects with real icons must each have a file in which to store information about that icon. If there is no such file, Workbench can assign the object a default icon depending on the object's type. For files and drawers, the icon information is stored in a file made up from the name of the object and the suffix '.info'. Volume icons are stored in a file called 'disk.info' in the first level of that volume.

All Workbench windows, apart from the root window, have a configurable viewing mode selectable from the Window menu (options in this menu operate on the active window). If the mode is set to 'Show Only Icons' then only objects with real icons will be displayed in that window. Setting the mode to 'Show All Files' will display all objects whether their icons are real or fake. It is also possible to switch between viewing the contents of a window pictorially as icons or just as a textual list of the objects' names. The 'View by Icon/Text' options perform this. If the icon corresponding to the window is real, the current viewing mode, position and size of a window can be saved by selecting the 'Snapshot Window' option from the Window menu. The 'Snapshot All' option will save the window status and the positions of all icons contained within it.

TOP TIP

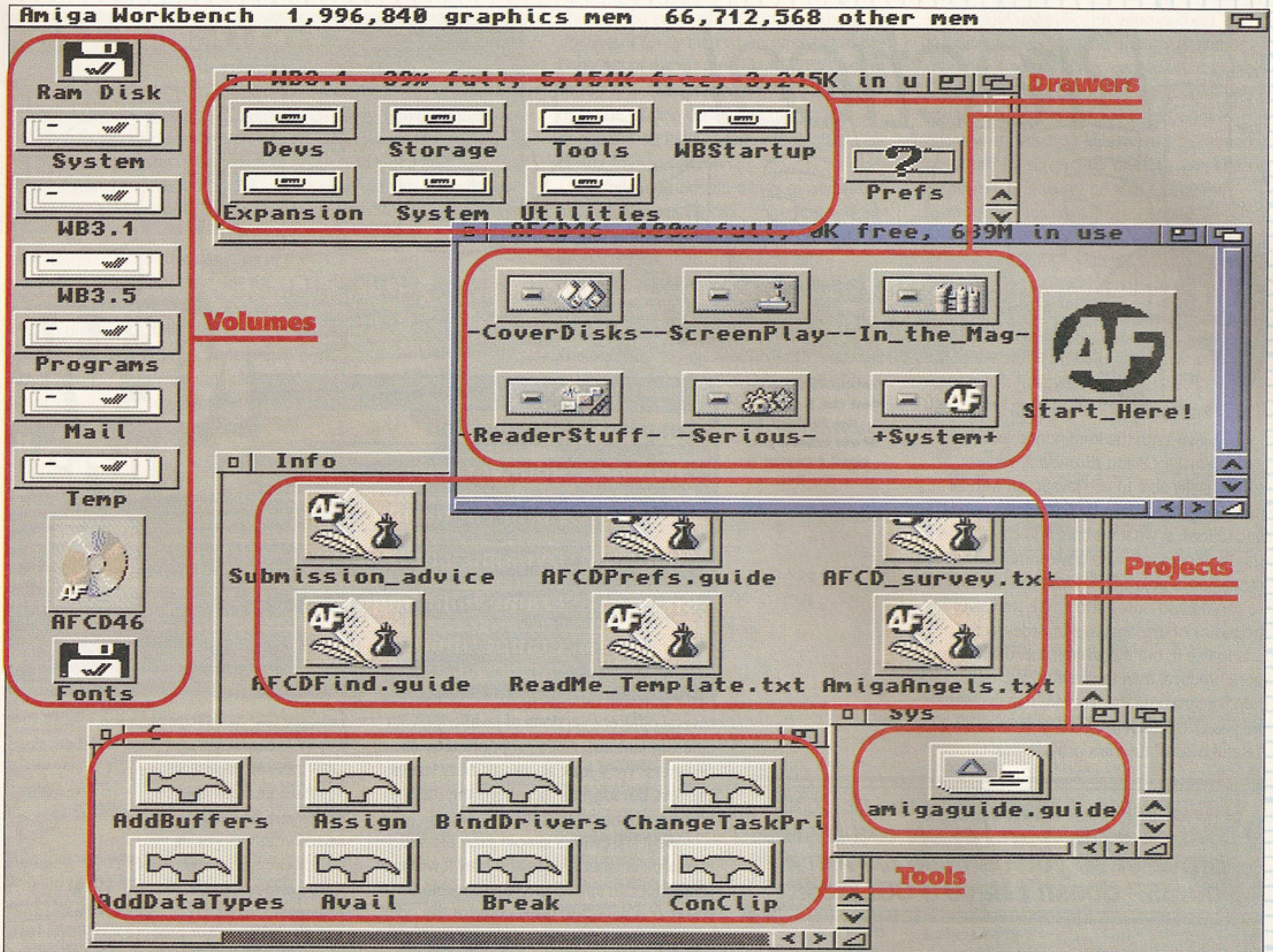
Software which expects a MagicWB palette will look strange in screens with more than eight colours. This is due to the way Workbench allocates its drawing pens. Try using a utility that performs pen locking such as FastIPrefs or FullPalette.

Dragging an icon with your mouse allows you to change its position within a window. If it has a real icon, this position can be remembered via the Snapshot option in the Icon menu. However, dragging can perform other operations. Dragging an icon to a window representing a drawer on the same disk as the icon itself will move the icon and its corresponding object to that drawer. Dragging an icon to a window of a different disk will create an exact copy of the object at that position on the disk (the original remains intact). When either operation is applied to a drawer, both the drawer and its contents are moved or copied.

An icon can also be dragged to the root window. This is known as leaving out an icon and can also be performed by selecting the 'Leave Out' option from the Icon menu. Icons can be left out permanently by snapshotting. When an icon is left out, only the icon image itself is displayed in the root window. Nothing happens to the object it represents. This allows the quick location of important drawers and files without having to search

TOP TIP

If you ever get stuck while using a program and can't find the manual, try pressing the HELP key on the keyboard. This will often activate online help or display a guide file.



WORKBENCH ICONS

Workbench divides icons into four main classes. Get the picture?

through many levels of a disk. A left out icon can be put away by dragging it back to its original location or by selecting the 'Put Away' option from the menu.

BLAST OFF

Files are classed as either tools or projects by Workbench. The difference is only apparent when you try to open one. A tool is an executable file, a program which can run by itself. A project is a data file which must be loaded by an external program. Projects include things like text files, pictures, sound samples and so on. Typically, a project will have a default tool associated with it. Double-clicking a project icon will launch that default tool and try to use it to load the project. To open the project with a different tool you can select its icon and then hold down Shift on the keyboard and double-click the tool you wish to load it with.

Highlighting an icon and selecting the Information option from the Icon menu will pop up a window displaying various properties of the object that the icon represents. Projects may have their default tool set here. Additionally, both tools and projects support a list of options known as ToolTypes. These will be supplied by Workbench to the tool or default tool when launched. Their exact nature depends on the tool itself.

Generally only tools with real icons can be run from Workbench as they know how to deal with the messages that Workbench will send them

To complicate matters further, only special programs can be run from Workbench, those that know how to deal with the messages that Workbench will send them. Generally, this includes all tools with real icons. Tools with fake icons are not meant to be run as Workbench programs. Opening such a tool will pop up a window with a string gadget containing the name of the tool. This window will also appear if you choose the 'Execute Command' option from the Workbench menu. Clicking the OK gadget will try to execute the text in the string gadget just as if it had been entered in a shell (more on that topic next issue).

APPICONS

Workbench allows programs to display special icons known as AppIcons in its root window. AppIcons behave differently than other icons: they cannot be dragged outside of the root window and their positions cannot be snapshotted. An AppIcon can be doubled-clicked or have other icons dropped on it to supply input to the program that owns the AppIcon. The results of such operations depends on the particular program.



TOP TIP

Workbench will benefit immensely from a graphics card. The extra speed and colours will breathe life into your desktop.



TOP TIP

To get real control over your desktop why not try a Workbench replacement such as *DOpus Magellan* or *Scalos*. Upgrading to OS3.5 will also fix many of the shortcomings of the current desktop.

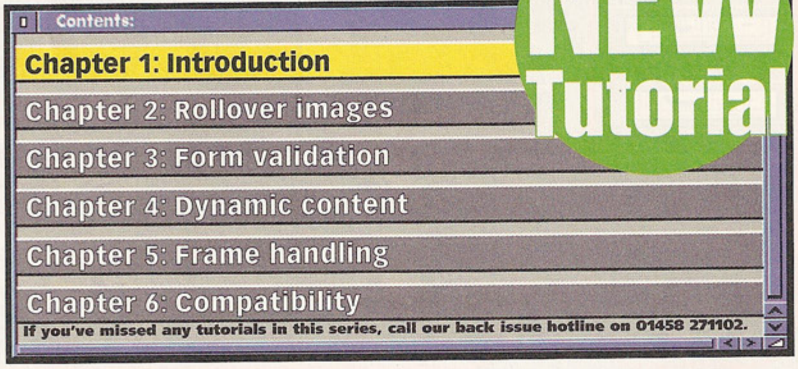
Practical JavaScript

Quiet at the back! Neil Bothwick is going to explain all about the language of the web

On the CD -In_the_Mag-/JavaScript

NEW Tutorial

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.



At last! With the imminent release of *Voyager 3* and *IBrowse 2*, we are finally able to use JavaScript with all main Amiga web browsers. Now is a good time to look at what we can, and cannot, do with JavaScript in a web environment. This tutorial looks at JavaScript in terms of what we can do and how to do it. We will cover the basics of the language in order to be able to use it, but the overall approach is far more practical than theoretical. We will therefore assume that you are familiar with the basics of script programming as the "Useful ARexx" tutorials provide this.

JavaScript is contained within the HTML of a page and executed by the browser so you can use it even if your ISP doesn't have a CGI facility

JavaScript is contained within the HTML of a page and executed by the browser. This is the opposite of CGI scripts that reside on, and are executed by, the server. This has the advantage that you can use it even if your ISP doesn't provide a CGI facility for your web space, as is the case with most free web space. The disadvantage is that it relies on every browser executing your script in the same way, something that doesn't always happen as the "big two" browser companies each try to force their own interpretation on the standard. This is made worse by the fact that there are several different versions of JavaScript, with different features, not all supported by all browsers. We'll look at compatibility issues later on, but for most situations the browsers behave similarly.

We'll start with a simple example and then look at what it does and how it works. JavaScript can appear anywhere within the HTML of a page and is executed at the point it is found. In this case we are going to add some text to the bottom of a page, showing the date and time it was loaded, and when the page was last updated on the server, so this script appears just before the </BODY> tag of the page.

```
<SCRIPT TYPE="text/javascript"
LANGUAGE="JavaScript">¶
<!— // Comment out the script for
non-JavaScript browsers¶
// Centre the text¶
document.write('<DIV
ALIGN=CENTER>');¶
document.writeln('<BR>This page
was loaded at ' + Date());¶
document.writeln('<BR>It was last
changed on ' +
document.lastModified);¶
document.writeln('</DIV>');¶
// —>¶
</SCRIPT>¶
```

The first line tells the browser that the following text is JavaScript and that it should be executed, not displayed. If you use functions only available in a later version of JavaScript, you must specify this in the language attribute. A script containing 'LANGUAGE="JavaScript1.2"' will only be executed by a browser that supports at least version 1.2 of JavaScript.

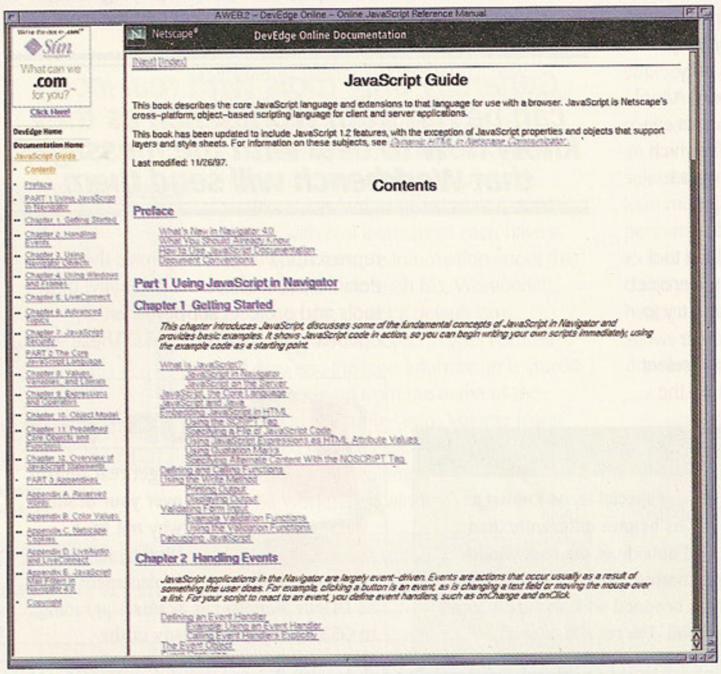
The HTML standard says that a browser should ignore any tags it doesn't recognise and display the contents as standard text. This would result in a non-JavaScript browser displaying the code of the script. To avoid this we include the whole of the script within the HTML <!— —> comment tags.

The next line is a comment, JavaScript ignores everything from // to the end of the line. The command document.write does just

JAVA OR JAVASCRIPT

Java and JavaScript are two completely different things, despite the similarity of the names. In fact, that's about all they have in common. Java is a full-blown programming language. Although its web usage is mainly for small Java "applets", it will be a core element of the new Amiga Operating Environment. There is currently no usable Java implementation for the Amiga.

JavaScript is an interpreted scripting language. The two languages have very different capabilities and complement each other rather than performing the same tasks.



The definitive reference manual for JavaScript is on Netscape's web site at developer.netscape.com/library/documentation/communicator/jsguide4/index.html

CASE SENSITIVITY

JavaScript keywords are case-sensitive, document.write is not the same as Document.Write. However, just to make things confusing, Internet Explorer is case-insensitive for client-side terms, such as document. The result is the worst of both worlds, you have to ensure you always type with the correct case, yet you cannot take advantage of the case-sensitivity to create extra variables.

what it says, it writes the contents of the brackets into the document, for the browser to render as HTML, in this case it's a tag to display the following text centred. This line, like all JavaScript statements, ends with a semi-colon. While you can usually get away with omitting the semi-colons if you stick to one statement per line, it's safest to get into the habit of always ending a line this way.

Using document.writeln does the same, except it adds a line feed to the end of the text. On line four we are displaying more than a text string, `Date()` is a JavaScript function to return the current date and time. The + operator joins the two strings, the text and the output from `Date()` into one string for document.writeln. We could just as easily have written this as two lines:

```
document.write('<BR>This page was
loaded at ');¶
document.writeln(Date());¶
```

Note that we include a `<BR>` in the string we send to the browser. The line feeds added by document.writeln are ignored when laying out the text, in the same way that line feeds in the HTML are ignored.

Line five uses a property of the document, more on this in a moment, that contains the date the page was last changed. This information is normally sent to the browser along with the page. Instead of including a line of HTML showing the date of the last update in each page, and needing to update your code each time, this JavaScript will automatically show the date the page was last uploaded.

Finally, we close the `<DIV>` tag and then the script. The HTML closing comment before the `</SCRIPT>` is important, without this, non-JavaScript browsers will think the rest of the page is also a comment.

PROPERTIES AND METHODS

JavaScript is an object-oriented language. We have already met one of the objects, "document", we will meet many others soon enough. The document object refers to the current HTML document, which may be a complete page or a frame within a page (or even a sub-frame within a frame). write and writeln are methods of the document object, that is document.write('text') writes text to the current document. In fact, document is a property of the window object, it should be written as window.document, meaning the document contained in the current window. This is used so much that you can use document on its own when referring to the contents of the current window. By current window, JavaScript is referring to a window or frame, so it is usually simpler to use document on its own rather than start calling frames windows.

While methods do things to objects, like writing text in them, properties contains information about their objects. Some properties are read-only, such as document.lastModified (it wouldn't make sense to be able to change this) while others can be changed from within a script. The bgColor and fgColor properties are the equivalent of the BGCOLOR and TEXT tags of `<BODY>`. Instead of `<BODY BGCOLOR="Black" TEXT="White">` you could use

```
<SCRIPT TYPE="text/javascript"
LANGUAGE="JavaScript">¶
<!–¶
document.bgColor="Black";¶
document.fgColor="White";¶
// –>¶
</SCRIPT>¶
</HEAD>¶
<BODY>¶
```

This is a fairly pointless example, using an extra six lines to achieve the same end as the standard `<BODY>` tag, but when we look at cookies later, you'll be able to see how to allow each user to save their own preferences for your site. We put the script in the `<HEAD>` section of the page, because once the body tag has been written then colours are set, changing them later would be no use (actually, you can change bgColor partway during a document, but this can produce unpredictable results, see weirdcolours.html for an example of code you should not inflict on your visitors). JavaScript deals with the document at the moment it is run. If you want to write to the window, you call the script at the point you want the output to appear. If you want to process information entered in a form, you must call the script after the form has been displayed, or it won't be able to find the form fields. This could mean mixing JavaScript and HTML together in a page, which makes editing later on a nightmare. To avoid this, it is often better to define all your JavaScript as functions in the head of the document so you only need a simple call to the script in the HTML body text.

Here is how we show the last modified date of the page using this method.

```
<HEAD>¶
<TITLE>....</TITLE>¶
<SCRIPT TYPE="text/javascript"
LANGUAGE="JavaScript">¶
<!– // Comment out the script for
non-JavaScript browsers¶
function ShowUpdated()¶
{¶
   document.write('<H5
ALIGN=CENTER><FONT
COLOR="Blue">');¶
   document.write('This page was
last updated on ' +
document.lastModified);¶

document.write('</FONT></H5>');¶
// –>¶
</SCRIPT>¶
</HEAD>¶
<BODY>¶
Body text¶
<SCRIPT TYPE="text/javascript"
LANGUAGE="JavaScript"><!–¶
ShowUpdated();// –>¶
</SCRIPT>¶
</BODY>¶
```

No matter how complex the script, the body text will only contain three lines of JavaScript. There is an even neater way of writing HTML to the end of a document, as we will see when we look at event handlers.

NO JAVASCRIPT?

Not every browser will run JavaScript, either because it doesn't support it or because it is disabled in the preferences. It is important to consider how your site will appear and work for those not using JavaScript. The examples we have seen so far are not essential to using the site, but other pages may not work as you intended without JavaScript. HTML provides a means to deal with this, the `<NOSCRIPT>` tag. A browser running JavaScript will ignore anything between `<NOSCRIPT>` and `</NOSCRIPT>` while other browsers will ignore the `<NOSCRIPT>` tags and display the text between them. If your pages will work differently without JavaScript, you should put a warning about this within the `<NOSCRIPT>` tags.



http://www.javagoodies.com contains a lot of useful information and examples on using JavaScript.

Useful ARexx

Adding a GUI to your ARexx scripts? Nothing could be easier according to Nick Veitch

On the CD -In_the_Mag-/ARexx

Contents:

If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.

The thing that tends to put a lot of people off writing and using ARexx scripts is that to some it appears so fiddly. All that shell nonsense, typing in commands and arguments isn't their idea of modern computing – after all, if you wanted to really learn several thousand arcane commands and their parameters, you might as well install UNIX.

> **DOpus not only launches scripts but, thanks to its flexible interface, allows you to pass parameters to them or use them to process selected files**

But ARexx scripts don't have to be like that. You are still going to have to understand all the ARexx commands to be able to write them in the first place, but you can make them easy to use, for yourself and others, by adding a graphical user interface or GUI.

There are several ways of doing this. For a start, many programs which allow you to invoke ARexx commands internally often have user friendly ways of passing parameters to them. Programs like *Directory Opus*, *Turbotext*, *Adpro*, *ImageFX* and so on have internal support for ARexx, and also ways of launching ARexx scripts from within the application, making it easier to incorporate scripts. *DOpus* not only launches scripts but, thanks to its flexible interface, allows you to pass parameters to them or use them to process selected files and so on.

This is a great way to use ARexx scripts, as it means no mucking about with shell windows, making sure you have the right parameter format or wondering whether you have to be in the right directory to get everything to work. It is also pretty easy to program, as the host application sorts out all the unpleasantness of passing the arguments in the right format, and in the case of *DOpus*, gathering extra input from the user.

However, it is still a bit limiting, as you are restricted to the kind of user interface that the host application is able to provide. If you want to use more advanced elements such as sliders, pop-up lists, colour wheels and so on, you'll have to look elsewhere.

There are plenty of GUI solutions for ARexx, which usually come in the form of libraries adding new functions to the basic ARexx ones for handling message ports and so on. The first thing to decide though is

Listing

```
/*************************************************************************/
/* Showports  Rexx, using VARexx*/
/*************************************************************************/

/* Check required libraries are present */

IF EXISTS("libs:rexxsupport.library") THEN DO
    IF ~SHOW("L","rexxsupport.library") THEN
        IF ~ADDLIB("rexxsupport.library",0,-30,0) THEN EXIT
END
ELSE EXIT

IF EXISTS("libs:rexxreqtools.library") THEN DO
    IF ~SHOW("L","rexxreqtools.library") THEN
        IF ~ADDLIB("rexxreqtools.library",0,-30) THEN EXIT
END
ELSE EXIT

OPTIONS RESULTS
OPTIONS FAILAT 10

SIGNAL ON SYNTAX
SIGNAL ON FAILURE

/* Get the filename for the GUI file */
gui_file = 'rexx:gui/ports.gui'

/* Make sure Varexx is running */
IF SHOW( 'p', 'VAREXX' ) ~= 1 THEN DO
    ADDRESS COMMAND "run >NIL: varexx"
    ADDRESS COMMAND "WaitForPort VAREXX"
END

ADDRESS VAREXX

IF OPENPORT("PLOP") = 0 THEN DO
    CALL rtezrequest "Could not open a port.",, "Varexx Error"
    EXIT
END

/* Load the GUI file */
```

Continued on next page ➡

Listing (continued)

```
  'load ' gui_file 'PLOP'

vhost = RESULT

/* vhost now contains the port */
ADDRESS VALUE vhost

/* show the GUI */
show

/* get a list of ports */
portlist = show('P',,'%')

/* read portnames into a stem variable */
counter = 0
DO Forever
   counter = counter + 1
   Parse VAR portlist name '%' remains
   portlist = remains
   portlister.counter = name
   if remains = '' THEN LEAVE
END
portlister.count = counter

/*Add port names to GUI lister */
Setlist Ports CLEAR STEM portlister


/* Wait for user to close window */
/* Or press the Okay button */

DO FOREVER

/* receive message packets from GUI */
/* using WAITPKT(), GETPKT() and GETARG() */
   CALL WAITPKT("PLOP")
   packet = GETPKT("PLOP")
   IF packet ~== '00000000'x THEN DO
      class = GETARG(packet)
      if class = "OKAY" THEN LEAVE
      if class = "CLOSEWINDOW" THEN LEAVE
   END
END

/* Hide the window, then close it */
   'hide unload'

   CALL CLOSEPORT( "PLOP" )
EXIT

/* Error messages */
failure:
   SAY "Error code" rc "- Line" SIGL
   SAY EXTERNERROR
   'hide unload'
   CALL CLOSEPORT ("PLOP")

EXIT

syntax:
   SAY "Error" rc  "- Line" SIGL
   SAY ERRORTEXT( rc )
   'hide unload'
   CALL CLOSEPORT ("PLOP")
EXIT
```

what sort of GUI you want to add. There are several different ones to choose from, including the excellent MUI and the rather less bulky Triton system. Again, there are many different ARexx libraries and support software for developing scripts using any of these systems. The choice is really up to you and the kind of scripts that you want to develop.

The common theme here though is that you build a GUI which then interacts with your ARexx script. The GUI might just be run at the beginning of a script, for example to receive settings, parameters, values or filenames, and then closed before the script does its work. Or it may be that the GUI is open for the entire duration of the script, with the user inputing data and settings through the GUI, and the ARexx script providing feedback through the same interface. In either case, the GUI is usually handled, whatever method you use, in two phases in the ARexx script.

The first phase is to set up the GUI. This is handled in different ways by the many libraries mentioned, but it is usually a simple case of specifying a GUI file and invoking the right functions to open it. The GUI file itself will be constructed beforehand using the development tools belonging to the GUI system you have decided to use. The second phase is to set up a part of the ARexx script which deals with the GUI and reacts to the actions which take place typically inside a loop.

I have included an example of a small but handy program I wrote incorporating GadTools and VARexx. I am always having to find out the port names of various software to write scripts for them, so I decided to write a program which lists them all in a nice lister window. It is incredibly simple to do.

Of course, you also have to create the GUI file. I did this using GadToolsBox, and it simply consists of a window containing a lister view and an Okay box. You can see it under construction in the boxout above.

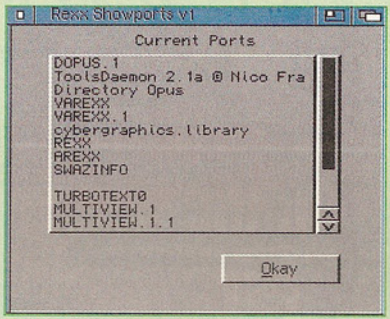
The program is well commented, so you should be able to follow it quite easily. The key parts are the `load` command, which loads the GUI file, `Show` which opens it up, and `Setlist`. `Setlist` is part of VARexx and enables you to add, remove or clear a lister in the GUI. In this case I separated the port names out into a stem (compound) variable and used the `Setlist STEM` option to add them to the lister. `Ports` is the gadget name of the lister as defined in the GUI I created.

As you can see, it's really quite easy. I hope to bring you some examples for the CD next issue, and of course, we'll be using a GUI in our HTML project!

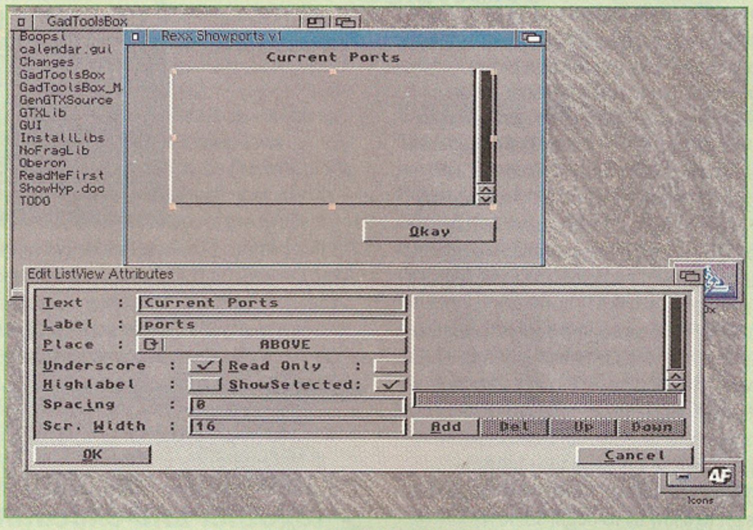
GADTOOLS

GadTools is a fairly old GUI library, supported by the GadToolsBox creation system. There are still a couple of good reasons for using it over things like MUI. The first one is that it doesn't have very heavy system requirements, so you will still be able to make small ARexx scripts which don't need to load large libraries. This is worth considering if you are planning on distributing scripts.

The second, and possibly best, reason is that it is pretty easy to create simple but effective GUIs using this system, and very simple to program them. MUI is excellent, but unless you want to spend twice as long programming the interface as you did creating the program, it probably isn't worth it for small scripts. If you are just starting out programming a GUI, GadTools is a fair bit easier to understand than going in at the deep end with MUI.



The finished article in action – showing all the open ports.



Constructing the interface is easy with GadToolsBox.

Program Perfection

On the CD -In_the_Mag-/Program_Perfection

Richard Drummond draws up a plan and then plunges into the murky waters of code writing

There comes a time in every software project when you've done enough planning and you have to get your fingers dirty by writing some code. Ideally, you should have two things before you start: a design document and an implementation plan. The design document should detail how the solution to the problem is partitioned into modules or classes. It should specify the relationships between these modules and their interfaces, describe any data structures required, perhaps outline any algorithms and specify the user interface. The implementation plan should be a step-by-step account of how you will test and assemble the modules into a whole program.

As yet I've presented you with neither. This is partly because of a lack of time and forward-thinking by yours truly and partly due to an infestation of gremlins. It just goes to show you how the real world of software engineering differs from the theory. Anyway, this session I will give enough of a design to allow us to begin some implementation.

GETTING IT RIGHT

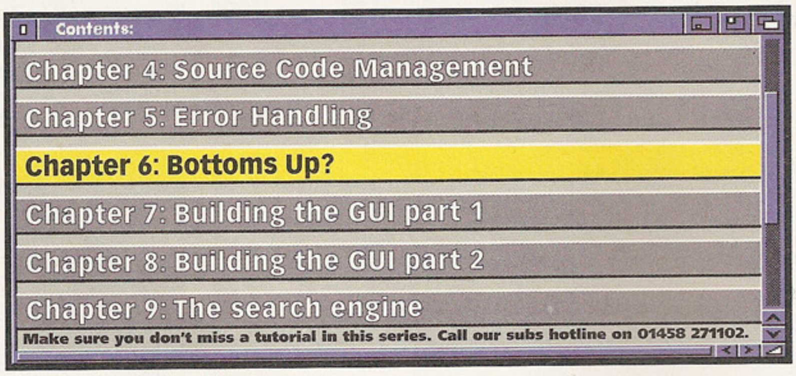
Before we go any further, though, a word about testing. After all, implementation and testing should go hand-in-hand.

One of the reasons for wishing software designs to be modular is for ease of testing. Low coupling between modules and tight cohesion within them allows testing in isolation before they are joined together.

Each member function of a module or class must be tested. This can be done by calling the function with sample data chosen from its test space, the set of all possible inputs of that function. Due to combinatorial explosion, for non-trivial functions this test space will be so large it is impossible to test the whole space. Thus, testing only increases our confidence in a function's correctness, it does not prove it. It is in fact possible to mathematically prove program correctness, but this is generally too complex in all but the simplest of cases.

How, then, do we choose this test data. Well, we can classify testing into two types: black box and white box. In black box testing we treat the functions as a black box: we concentrate only on it's interface specification and ignore what goes on inside. We choose test data that is representative of the test space, making sure

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.



we include typical values and also any unusual combinations or data that we think most likely to cause failure. White box testing means we look inside at the function's implementation and choose test data to ensure every line of code is exercised. A good time to start planning test cases for a function is when designing the interface of that function.

It is important to piece together modules in a methodical fashion rather than throwing the whole lot together and executing the result

GOING IT ALONE

A problem arises when testing functions that require services from a separate module. How can we execute such a function in isolation? In many cases we cannot realistically do this, especially if the services required allocate resources such as memory, files, etc.

As a trivial example, suppose we wish to test a function `strtoupper()` which converts any lowercase letters in a string to uppercase. A rather inefficient implementation might be:

```
void *strtoupper( char *s )¶
{¶
    int i;¶

    for( i=0; i < strlen( s );¶
         i++ )¶

         s[i] = toupper( s[i] );¶
}¶
```

There are two concepts which can help here: the stub and the patch. A stub is a minimal implementation of a function, perhaps only returning a fixed value. For example:

```
int strlen( const char *s )¶
{¶
   /* strlen stub */¶
   return 1;¶
}¶
```

Alternatively we could patch the original function so that for testing purposes it no longer requires the `strlen()` call. For example:

```
for( i = 0;¶
     i < 1 /* strlen( s ) */;¶
     i++ )        /* patch */¶
     s[i] = toupper( s[i] );¶
```

Either method will allow us to test purely the code in the `strtoupper()` function. As in this case, such testing may be rather artificial.

PUTTING IT TOGETHER

Your project's design document should provide you with a hierarchy of all the modules or classes required by your solution. It is important that you piece together these modules in a methodical fashion. The big bang approach, throwing the whole lot together and executing the result, does not permit the easy location of errors. You should integrate the modules one at a time, testing the resultant whole at each step.

Which module should you start with? There are two traditional approaches: top-down and bottom-up. In the former you start at the top of the tree and work your way down, level by level. In the example

A simple test

As an example of how to choose test data for a function, consider the `strlen()` function from the standard C library. A typical implementation might be as follows:

```
int strlen( const char *s )¶
{¶
    int len = 0;¶

    while( *s++ )¶
        len++;¶

    return len;¶
}¶
```

The test space here is the set of all possible strings. This test space is not actually infinite, but it may as well be.

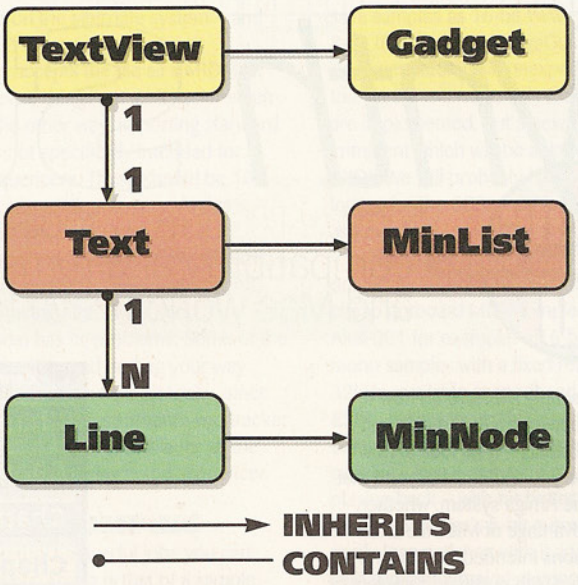
We have not formally specified the interface of this function, but the above implementation makes two assumptions: that s is a valid string pointer and that the string it points to is not longer than the maximum value of an int. The former will give garbage results and the second will never terminate, both classes of failure. Using either as test data would be pointless.

The table below shows some test cases we might choose.

CASE	INPUTS	EXPECTED RESULT
1	"string"	6
2	"a"	1
3	""	0
4	"a much longer string"	25
5	"+!0123abcDEF"	8

Note that there are no additional white box cases to consider here, since every line is executed for a string of non-zero length. Also, you may consider that case 5 is rather odd, but, from a functional point of view, we do not know if the function would behave differently depending on the range of characters composing the string.

See the SimpleTest drawer on the CD.



This portion of AFMore's class tree deals with how a text file is represented internally.

provided, a top-down order might be to integrate the modules in order A, B, C, D, E, F and G. Bottom-up means you start at the lowest level and work up, say, in the order E, F, G, C, B, D, A for the same example. In a purely object-oriented solution, bottom-up may be the only feasible route.

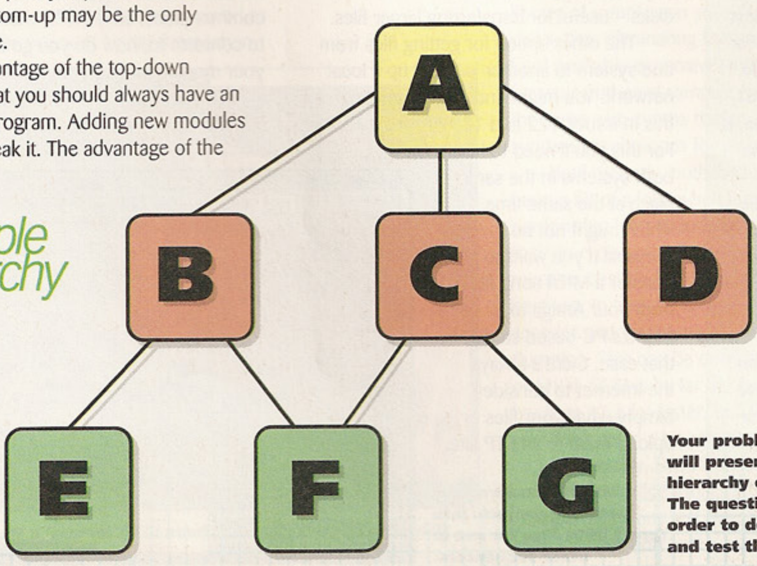
The advantage of the top-down method is that you should always have an executable program. Adding new modules shouldn't break it. The advantage of the bottom-up method is that it allows you to focus more time on the lower level modules which probably do the bulk of the work. The danger is, though, that you do not get an overall picture of the whole program until integration is complete. The best idea then is to build and integrate your program's modules in the order that suits you, particularly if that order makes testing easier.

If you are being really methodical, the creation of an implementation plan is a good idea. This is a step-by-step account of how you will build the whole program. It should list the order in which you implement and test individual modules and the order in which the integration is performed. You should also document any stubs or patches required. Going back to the example, the plan might begin:

1. **a. Implement module E.**
   b. Test E.
2. **a. Implement module B (stub module E).**
   b. Test B
3. **a. Integrate B and E.**
   b. Test integration.

and so on.

Example Hierarchy



Your problem solution will present you with a hierarchy of modules. The question is, which order to do you code and test them in?

BACK TO OUR PROBLEM

The task at hand in our *AFMore* project is to create a program which will display text files in a standard Intuition window. As I said initially, this program's interface will be constructed using BOOPSI (Basic Object Oriented Programming System for Intuition). I will talk about BOOPSI in depth next time, but for now it is sufficient to say that the bulk of *AFMore*'s job will be carried about by a BOOPSI custom gadget which we will create called TextView. This will take care of the rendering, scrolling and updating of the desired text in the window.

The TextView gadget requires an internal representation of the text that we wish to be displayed. To make TextView re-usable, we won't require it to know about text files; we will simply supply it with a buffer containing the raw contents of the file. TextView will then parse this buffer to find the start of each line of text and build a dynamic list of pointers to each line within the buffer. The content of this buffer is thus static and must persist as long as we wish it displayed. This method is faster than allocating individual memory chunks for each line of text and is applicable here as the text does not need to be modified.

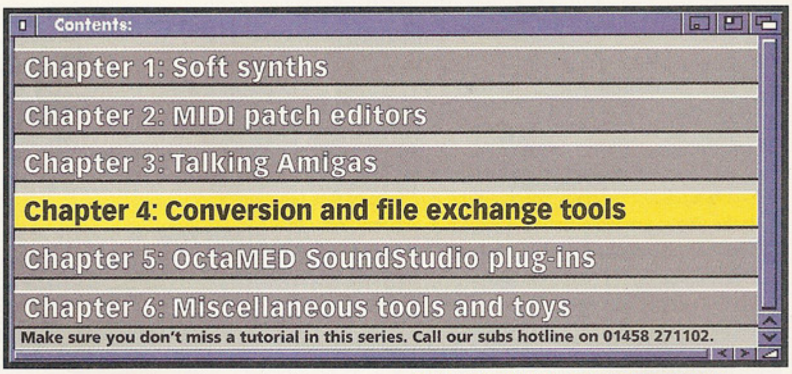
We will create two abstractions to help us: Line and Text. AmigaOS provides us with structures and routines for list and node handling and which we will build upon. To usurp the OO parlance, our Line class will inherit from the system's MinNode class and the Text class will inherit from the system's MinList class. The Line class will add attributes Contents (a pointer to the text for that line) and Length (the number of characters in that line); Text will add a Length attribute (the number of lines in the whole text).

Designs for these modules, their implementations and test cases are supplied on this issue's coverdisc. With this preparation out of the way, next time we can start building the TextView gadget itself and actually view some text on screen. AF

Synth Studies

On the CD
-In_the_Mag-/Synth_Studies

Tony Horgan tools up his Amiga for cross-platform compatibility and turns explorer, discovering what the PC and Mac worlds have to offer



This isn't simply a lecture on how to convert between a dozen different sample formats – it's a look at how you can expand your potential beyond that of a stand-alone Amiga system, whether that's taking advantage of MIDI file and sample collections intended for PCs and Macs, interfacing with outboard samplers or collaborating with other musicians working with different setups. While PCs and Macs spit out anything vaguely unfamiliar, your Amiga can adapt and exploit all kinds of different resources and systems.

BRIDGING THE DIVIDE

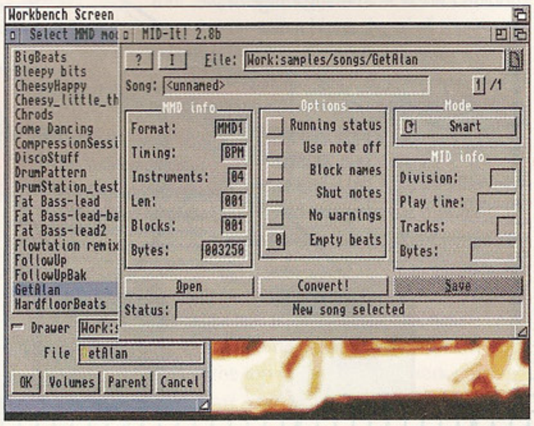
Before we talk about converting file formats, I should mention CrossDOS, just in case you've managed never to use it. CrossDOS is included with Workbench and allows you to format, read and write disks with an MS-DOS filesystem. That means you can move files between your Amiga and a PC, or any other system that uses MS-DOS format disks, such as Macs (and I'd guess Atari STs, but not having used an ST for years I couldn't be sure). If you've got a high density drive, you can write 1440K disks – otherwise you will need to stick with the 720K variety. You can use CrossDOS to read and write to other media as well, such as Jaz and Zip disks – useful for transferring larger files.

> While PCs and Macs spit out anything that's unfamiliar, your Amiga can adapt and exploit all kinds of different resources and systems



Even a cheap sampler with basic facilities can be improved with Sample Dumping.

The other option for getting files from one system to another is to set up a local network. You might find some useful tips on this in issues 122 and 123 of *Amiga Format*. For this you'll need to have both systems in the same place at the same time, which might not be practical if you want to transfer a MIDI song file from your Amiga to a friend's PC-based studio. In that case, there's always the Internet to consider. Simply email your files or upload them to an FTP site.



MID-It! can turn your OctaMED projects into Type 1 MIDI files for use in other sequencers.

LIVING IN HARMONY

So that's the actual file transfer sorted out. Now we come to the matter of compatibility of the files themselves. The trouble with standards is that they rarely are standard.

Take "the mod format" for example. There are so many different permutations that it's odds on that a module made in one tracker won't replay perfectly in another. The best way to overcome this is to use a module conversion tool if you need to import it into a different tracker. Even then, you'll probably lose some of the song data along the way, such as certain effect commands, and you might find that the tempo and instrument finetune settings get changed too.

It's probably more likely that in the event of a collaboration with a PC-using musician, a tracker module won't be of much use anyway. MIDI sequencers with hard disk recording features are more commonplace, so if that's what you've got to conform to, how do you go about turning your module into something useable?

The best way is probably to record your song to disk in small sections. Most modern

GET IN SYNC

Synchronising two computers can be one of the easiest and most flexible ways of integrating your Amiga into a different setup. For example, let's say your collaborator has a PC-based MIDI studio centred around a MIDI and audio sequencer such as Cubase VST. So long as your Amiga software supports MIDI synchronisation, it should be easy enough to get the PC to trigger the Amiga at the start of the song, then the Amiga could get on with playing samples and MIDI instruments, the sounds from which could be fed back into the PC and recorded as hard disk audio. Look for the Send Sync and Receive Sync options in the MIDI menus.

Even if you can't get them to sync themselves, you could always just match the tempos of the sequencers on both machines, then run the audio into a hard disk recording application, which could then be imported into the sequencer on the PC. I'm assuming here that you, as the Amiga user, will have to be the more flexible of the collaborators and realise that your Amiga will be able to fit with their PC or Mac better than the other way around – not to mention the fact that, as an Amiga user, you're probably more used to working your way around problems like these.

ON THE CD

There's no audio track from me on the CD this time as the subject doesn't really warrant it, but you will find a lot of useful tools for converting all kinds of audio, MIDI and mod formats. I suggest you have a good look through them all and keep the CD somewhere safe (don't you always?) as you never know when one of these little utilities might save you a lot of sweat and tears.

trackers have a Record to Disk option, and if yours does, use this to generate stereo 16-bit 44.1kHz WAV files on disk. For example, you could split the song up into sections of 16 bars, which would make rearrangement and remixing a lot easier. These samples could then be imported straight into any Mac or PC sequencer with digital audio features.

> *Your Amiga will offer a far better environment for editing samples with precise trimming, unique effects and a massive library for storage*

An alternative solution to transporting a sample-based SoundStudio song to a MIDI sequencer is to select 'SMF Type 0' as the file format when saving the song. You would then need to save out each of the samples individually. The MIDI file could be imported into a sequencer, and the samples loaded into a 'sound font' on the PC. You could also use an outboard sampler to replay the sounds, triggered from the sequencer.

MIDI FILES

Fortunately MIDI files are very portable things. There's no reason why a MIDI file generated by a sequencer on your Amiga shouldn't work perfectly when loaded into a different sequencer, or even a hardware MIDI file player. The point to remember here is that for the song to sound the same, you'll need to have your second system connected to all the same MIDI instruments. This is also assuming that what you save from your sequencer is actually a straight MIDI file – if you've used samples within your song and they've been saved as part of the file, you won't hear them when you play it on the alternate system – and that in itself is assuming the other sequencer accepts the file as a MIDI file.

However, things are a bit easier when working the other way, importing standard MIDI files not specifically intended for Amiga sequencers. These should be 100 per cent compatible with your Amiga sequencer, and even OctaMED SoundStudio will load and convert them into tracker sequences automatically. However, taking a MIDI file into SoundStudio has its problems. Some of the data may be lost, and finding your way around the song can be a bit tricky, since the arrangement of instruments and tracker blocks will bear little resemblance to the 'piano roll' style display in the sequencer.

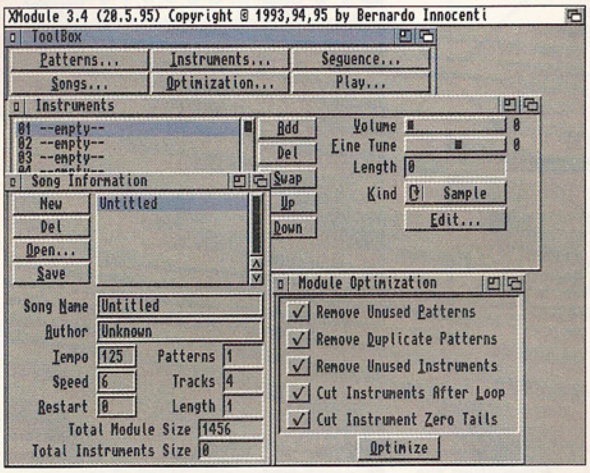
SAMPLE DUMPING

One of the most powerful jobs you can assign to your Amiga is that of a sample editor. Even the biggest and best outboard samplers have poor editing features compared to your Amiga running Samplitude, SoundProbe or SoundFX. If nothing else, your Amiga will certainly offer a far better environment for editing samples: you can use a mouse and keyboard, a decent operating system and work on a full size monitor. You'll be able to trim and loop samples extremely precisely, use certain effects that won't be available on the sampler itself, and store a massive library of samples on your Amiga's hard disks, thus eliminating the need for a noisy (and probably expensive) internal hard disk for your outboard sampler. You can also do the same with synths that use sample and synthesis techniques for sound generation.

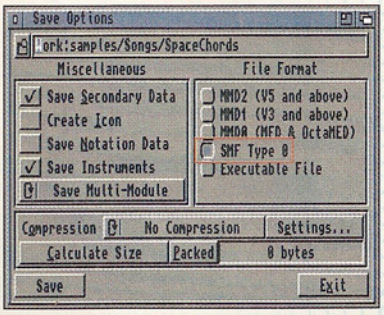
Until recently, outboard samplers have been a bit of a joke when it comes to conforming to computer standards, with their own disk and file formats, not to mention custom RAM upgrades, so the best way to transfer samples between a sampler and your Amiga is via sample dumping. This can be done either by SCSI or MIDI. SCSI is by far the best way, mainly because it's a lot faster, but MIDI will do if you don't mind a bit of waiting.

Fortunately, Sven Thoennissen has written a very nice tool called Sample Dumper that does just this. You can pass samples back and forth, with options to save samples as 16-bit WAV, 16-bit AIFF or 8-bit IFF. The clear AmigaGuide documentation is an unexpected bonus too. At the moment, only the send options are implemented, but a new release is imminent which will be able to receive via MIDI. We will probably have to wait a little longer for the SCSI receive feature though, as I'm told it's proving tricky to get working.

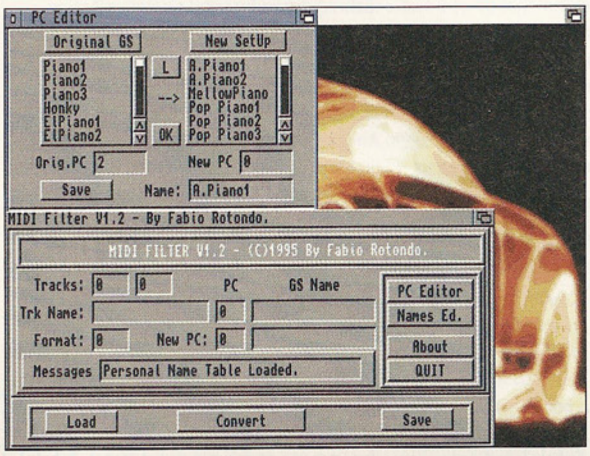
This is the sort of software that could drastically improve the functionality of a cheap outboard MIDI sampler. Take the Akai S01 for example: a 16-bit multitimbral mono sampler with a fixed record rate of 32kHz, available secondhand for about £200. It's got incredibly rudimentary editing and storage facilities but it's very capable when it comes to sampling and playing back – with far better sound quality than your Amiga's 8-bit output. You could easily lose patience with it and give up, but with sample dumping at your disposal it could become part of a very cost effective and flexible sampling system. I might just go out and get one myself actually (after double-checking that the S01's MIDI spec includes sample dumping of course).



XModule is one of the best module conversion tools, with an extensive GUI that almost turns it into a tracker.



Don't forget that OctaMED SoundStudio can import MIDI files and export mods as Type 0 MIDI files.



Make yourself a General MIDI emulation map for your non-GM devices using MIDI Filter.

Q+A

Q I've got a load of MP3 files from the net but I need to convert them to IFF or WAV samples. How can I do it?

A You'll find lots of conversion tools for all kinds of different audio formats on this issue's CD.

Q I want to export MIDI files from OctaMED SoundStudio, but it only saves the Type 0 variety, which is quite messy.

A Use MID-It! from the CD to convert your modules to Type 1 MIDI files.

Q I've acquired a large collection of General MIDI files and I want to play them back through my MIDI keyboard. It's not GM compatible but has just about all the same sounds, just in different places. Can I get the files to work properly with my synth?

A Yes. You'll need to use MIDI Filter, which you'll find on the CD. This allows you to create a General MIDI emulation map for your synth by matching GM sounds to those on your synth.

Banging the Metal

On the CD -In the Mag-/Banging_The_Metal

Simon Goodwin explains Amiga Blitter hardware

Contents:

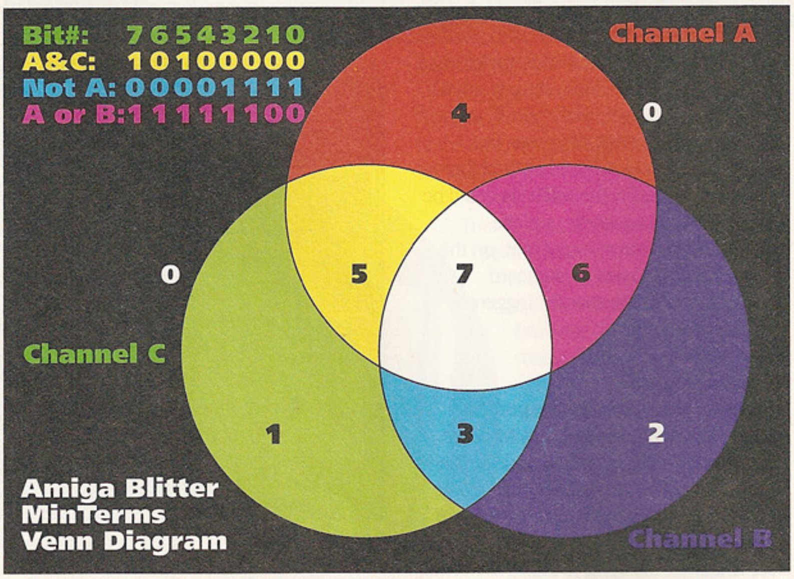
If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.

The 'Blitter' or bit image manipulator is not so much a processor as an optimised way of copying, testing and manipulating groups of bits scattered through memory. It excels in operations that normal processors find difficult and long-winded. Blitter concepts have since been copied, with varying accuracy, in computer systems, from Atari's TT through Panther and Jaguar consoles, to current PC and Mac graphics cards, where the bonus may be billed as a 'Quickdraw' or '2D acceleration'.

Our Blitter has been surpassed in speed, but never matched in versatility. Whilst other Blitters are limited to graphics operations the Amiga one is ideally suited for 2D and texture-mapped 3D bitplane graphics; it can manipulate sounds for stereo and sample rate conversion just as well, and perfectly suits Amiga floppy drives.

> Unlike Atari's first effort, and many graphics card chips, the Amiga Blitter can access memory at the same time as other chips

The Blitter and Copper coprocessor frequently program one another, giving a seamless interface, freeing the 'main' processor for applications. Unlike Atari's first effort, and many graphics card chips, the Amiga Blitter can access memory at the same time as other chips. Even when less than half the time is available, as explained in part two, the Blitter may back off periodically to let the 68K past, or be 'nasty', hogging chip-memory cycles until its work is done. At the end of this series I'll show just how finely this balance can be set.



This diagram exemplifies the brilliance of MinTerms.

TABLE 1: BLITTER SET-UP REGISTERS

bltcmod	$60	Source C modulo word
bltbmod	$62	Source B modulo word
bltamod	$64	Source A modulo word
bltdmod	$66	Destination D modulo
bltcdat	$70	Source C data word
bltbdat	$72	Source B data word
bltadat	$74	Source A data word
bltcon0	$40	DMA, MinTerm and offset
bltcon1	$42	Line and fill control etc.
bltafwm	$44	First word fetch left mask
bltalwm	$46	Last word fetch right mask
bltcpt	$48	Long channel C source addr
bltbpt	$4C	Long channel B source addr
bltapt	$50	Long channel A source addr
bltdpt	$54	Long channel D destination
bltsize	$58	Words wide 0-5 height 6-15

Note: ECS and AGA allow 32x bigger blits

FUNDAMENTALS

The Blitter is a 'state machine' that manipulates up to four streams of data to and from memory, according to settings programmed into custom chip registers. At its simplest, the Blitter can read one stream and write another, copying images, samples or other data.

It can do tricks en route, exchanging one and zero bits, for example. The listing inverts one bitplane of a Qdos display, swapping black and green wherever they appear on the screen. Qdos stores 16K of green bits at address 64K; a similar technique can be used on native Amiga bitplanes located with our Copper List disassembler.

The listing uses Commodore's register names, like Table 1 and Blitter_asm on the Amiga Qdos support disk and *AFCD46*. The first and last lines toggle Qdos Blitter screen updates and PAUSE until existing blits finish. The assembler version disables Qdos screen interrupts, looping until bit 14 of DMACONR indicates that the Blitter is no longer 'busy'.

TABLE 2: SOME USEFUL BLITTER MINTERMS

VALUE	INPUT LOGIC	EFFECT
$F0	A	Copy A to D
$0F	~A	Invert A to D
$30	A & ~B	A but not B
$4A	~A&C v A&B&~C	Textured line
$A0	A & C	A but only if C
$CA	A&B v ~A&C	Cookie-cutter
$FC	A v B	Either A or B

A GOOD COMBINATION

The Blitter combines three input channels, A, B and C, into an output channel D. A set bit on each input channel corresponds to the area inside a circle in the Venn diagram. Eight control bits in BPLCON0 correspond

BASIC to invert the green plane of a Qdos screen

```
BLIT_OFF:PAUSE 2:REM Wait till Blitter is released
POKE_W BLTCON0,HEX("90F"):REM Copy inverted A to D
POKE_W BLTCON1,0   :REM Move progressively up memory
POKE_L BLTAFWM,-1 :REM Use all bits at word edges
POKE_L BLTAPT,65536   :REM Read from screen plane
POKE_L BLTDPT,65536   :REM Write to Qdos screen RAM
POKE_L BLTAMOD,0      :REM Clear modulo on A and D
POKE_L BLTCDAT,0      :REM Clear data on B and C
POKE_W BLTSIZE,128*64:REM Scan 16K (128*128 bytes)
BLIT_ON:PAUSE 100:REM Restart Qdos screen updates
```

to eight areas in the diagram, representing all possible combinations of bits from the three channels. If the control bit is set, that combination of inputs yields a set bit in the destination.

There are 256 combinations or 'MinTerms', each with various levels of usefulness. Area 0 is the outside, representing neither A, B nor C set. Area 7 signifies a set bit on all three channels. Thus a MinTerm of 129 (first and last bits set) would send a set bit to channel D only if all input bits were the same: all set (area 7) or all unset (area 0).

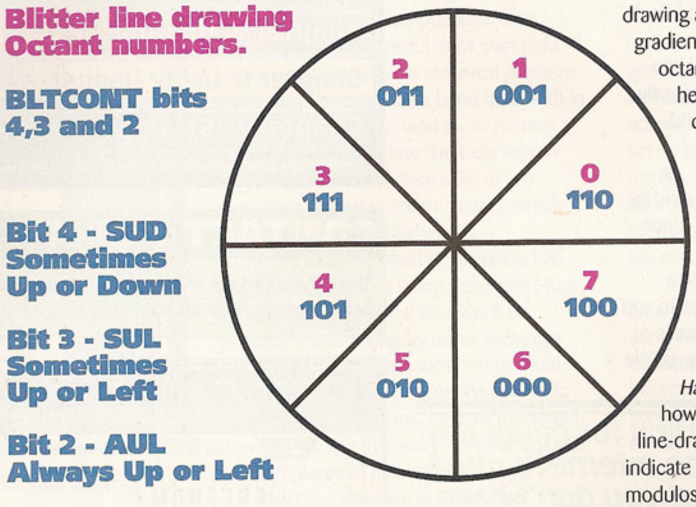
CLIPPING

As with bitplanes, the Blitter delimits the edges of images with Masks and Modulos. Masks are patterns with set bits for data that should be retained, and unset bits for stuff to be clipped out. Modulos determine the step between one line of an image and the next, letting us copy packed images, without margins, into a much wider screen.

The Blitter can slide data from the first two channels to any bit boundary, changing the alignment of graphics within the display words. These shifters correspond to the delay registers used for smooth horizontal scrolling.

Constant masks allow rectangular clipping, but cannot overlay an image with an irregular outline, or 'holes' in the middle where the background should be visible. Such 'cookie cutter' blitting uses four DMA channels. One fetches the mask, pre-calculated by combining set bits in all the colour planes of the image. Minterm $FE conveniently combines three planes into one mask.

The cookie cutter uses channels A and B for the mask and image to be overlayed, shifting appropriately for any pixel offset in the display words. Channel C reads the background, and D writes the combined image, formed by mixing A and B – the masked input – with 'not A' and C, the background outside the mask. This combination corresponds to MinTerm bits 7, 6, 3 and 1 being set. You repeat the blit for each source and destination plane, changing just a few of the Blitter registers.



Octants distinguish the direction and rate of X and Y changes in line drawing.

DMA can be disabled when the inputs are constant patterns or results only need to be tested, not stored. The Blitter's speed is doubled, to move almost 4MB a second, if only two DMA channels are active. Simple copy and scroll operations use only channels A and D. Channel registers are stored as words in the order A, D, B, C so A and D can be configured in a single long word instruction.

ALTERNATE BYTES

Last issue we saw how FM disk recording inserts a clock pulse between each bit of user data. The Blitter can generate clock-bits and insert data at half-byte intervals. One channel reads raw data like a single column line, inserting it into a 4-bit wide 'screen' via DMA channel D. Intermediate clock and space-bits come from a blitter data register without using a DMA channel to fetch them, as they're the same for every word.

MFM encoding mashes pairs of bits together with the Blitter then smears them out into patterns listed last issue. AmigaOS uses two passes, encoding odd then even bits. The Blitter is versatile but not always the fastest way to do this sort of thing, because it works strictly 16 bits at a time, even on AGA systems, and is limited to simple Boolean decisions. Combined blitter and CPU table operations sometimes give the best of both worlds.

QL screens interweave red and green data bytes, so the Amiga Qdos VDU_ASM code extracts alternate bytes with the blitter, as if copying half 16-bit images to 8 bit wide 'screens' a thousand lines tall. Similarly, Atari emulators sift every fourth byte from 16-colour ST screens which distribute eight pixels of data across each 32 bit word. Packed stereo can be split into left and right channels for audio DMA, or under-sampled by skipping bytes periodically, with the hardware filter smoothing out the gaps.

VECTOR EXTRAS

Jay Miner also designed the Blitter to boost vector, wire-frame and filled 3D graphics. The Blitter supports the canonical line-drawing algorithm in hardware. Line gradients are classified among eight octants, depending on their angle and hence rate of X and Y coordinate changes, just as optimised software categorises lines before starting to plot pixels. The eight octants in the diagram correspond to three arbitrary-seeming bits, AUL, SUD and SUL, in BLTCON1. These exchange X and Y and directions in the hardware to ensure lines step correctly.

Page 192 of the *Amiga Hardware Reference Manual* shows how to set up the Blitter registers for line-drawing. Besides the octant, you indicate the start and end points and modulos to suit the line and bitplane widths. Automatic filling of closed shapes requires little extra effort.

As soon as you bang the length into BLTSIZE, the Amiga hardware can draw a line a thousand or more pixels long, over or mixed with the background, with an optional texture from Blitter channel B, at almost a million pixels per second. Meanwhile you can poll the Blitter's status, or await an interrupt signal when the job has been done.

Bit 13 of DMACONR, next to the Blitter status bit, indicates if any set bits were generated in the last blit. This facilitates collision detection, pattern matching, disk verification, and Fax scan-line compression. The more you experiment with the Blitter, the more useful you'll find it. Modern processors may copy data faster, but the Blitter remains an elegant and powerful device for bulk operations on bits of chip memory.

SPRITE AND BREEZY

Amigas support hardware sprites, like old Ataris and Commodore 64s, for overlaid symbols like flying bullets or the ghosts in Pacman. Our mouse pointer is a sprite, so the system doesn't have to keep erasing and re-drawing it, like an Apple Mac would, when it overlaps other graphics. In the next tutorial I shall explain all, including bigger, more precise AGA sprites.

TABLE 3: BLITTER BLOCK CONTROL REGISTERS

BPLCON0	Bits 0-7: MinTerm combination A, B and C for D Bits 8-11: DMA control of channels D,C,B and A Bits 12-15: Channel A bit shift offset 0 to 15
BPLCON1	Bit 0: 0 for MOVE, 1 for DRAW Bit 1: Copy direction, 0 for UP Bits 2-4: Fill operation control Bits 12-15: Channel B bit shift offset

TABLE 4: BLITTER VECTOR CONTROL REGISTERS

BPLCON0	Bits 0-7: MinTerm combination $4A (~AC v AB~C) Bits 8-11: %1011 = use DMA channels D, B and A Bits 12-15: Bit offset of first pixel to plot
BPLCON1	Bit 0: 1 for DRAW, 0 for MOVE Bits 1-7: Line orientation (see AHRM page 268) Bits 12-15: Offset of start in texture from C

Amiga.net

Dave Cusick is our undercover reporter in the world of web news

Contents:

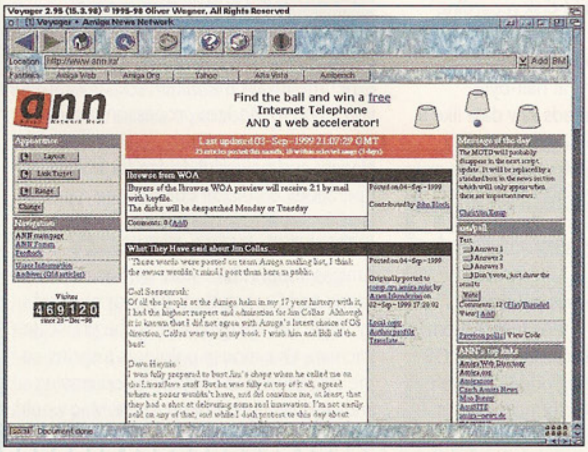
If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.

Usenet is one of the most commonly misunderstood facets of the online world. It's essentially the biggest bulletin board system in existence, originally created in 1979 at the University of North Carolina in the United States, by two students called Tom Truscott and Jim Ellis. It was a totally distinct system from the Arpanet, which ultimately developed into the Internet as we know it today. Originally Usenet connected two computers, and carried 15 newsgroups which utilised around 15K each day.

Nowadays Usenet news can be read by anyone with an Internet connection, since many ISPs and Internet-connected institutions run their own Usenet news servers which carry Usenet messages to and from users. There are certainly in excess of 30,000 newsgroups although it's impossible to determine exactly how many there are, since not all news servers carry all of the newsgroups. Usenet messages are probably viewed by at least 20 million people around the world. There are newsgroups devoted to every topic imaginable, from computing to gardening, and from Britney Spears to law enforcement in London, Ontario.

Usenet has a reputation for being the refuge of some of the Internet's most shady characters but you don't have to come into contact with them

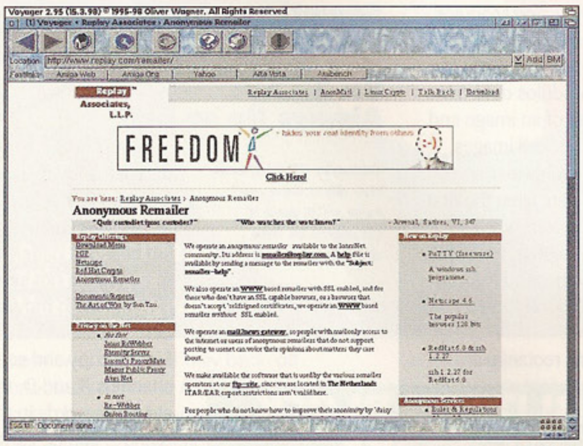
Usenet has always been rather more underground than most of the other areas of the Internet. Along with IRC it has gained a reputation as the refuge for some of the Internet's most shady characters. It's certainly true that there are plenty of weirdos and, indeed, some downright dangerous people who make use of Usenet, but if you don't frequent the newsgroups that these characters tend to confine themselves to then you won't come into contact with them – it's as simple as that.



Regularly checking Amiga Network News is one of the easiest ways to keep abreast of the latest developments in the Amiga world.

CONTACT POINT

You can contact me with your comments, questions and suggestions at dave@cusick.co.uk or through my Web site at www.cusick.co.uk.



Replay Associates provide anonymous remailers so that messages can't to be traced back to you.

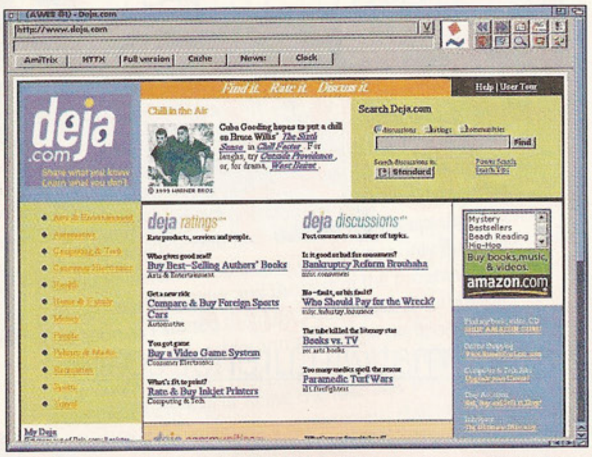
NEWSAGENT

There are several ways in which you can read and respond to Usenet news. The most obvious is to use a news client, and there are plenty of good ones available for the Amiga, as a look in the comm/news directory of Aminet will confirm. Sometimes if you subscribe to one of the newsgroups carried by the news server you've chosen to log in to, when you go online you can hit a button and all unread messages in that newsgroup will be copied to your machine. You can then go offline to read them, compose responses to any that you wish to, and then the next time you go online your messages will be uploaded and fresh ones will be downloaded. Clients which work in this manner are called offline newsreaders.

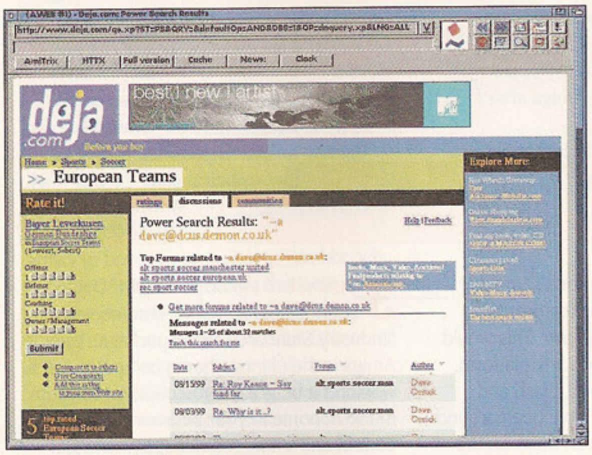
With most programs, when you subscribe to a newsgroup all that happens when you go online is that you are presented with a list of messages which have been posted to that group. You can then highlight any that you wish to read and download just those. Clients like this are online/offline hybrids.

There's a great deal of variance in terms of functionality between news clients. Pretty much all of them will let you read messages whilst online and respond to them there and then (these are online newsreaders). The vast majority also offer at least some sort of support for offline reading and responding. Some email programs offer full newsreading capabilities, Microdot-II for instance.

Now there are plenty of people who read Usenet newsgroups using news clients on all sorts of computer platforms, and regularly post messages themselves. There are also countless lurkers who read certain newsgroups regularly without ever posting anything. What's more, there are plenty of



Deja is an essential bookmark for folks who want to sample the best of Usenet without having to use a news client.

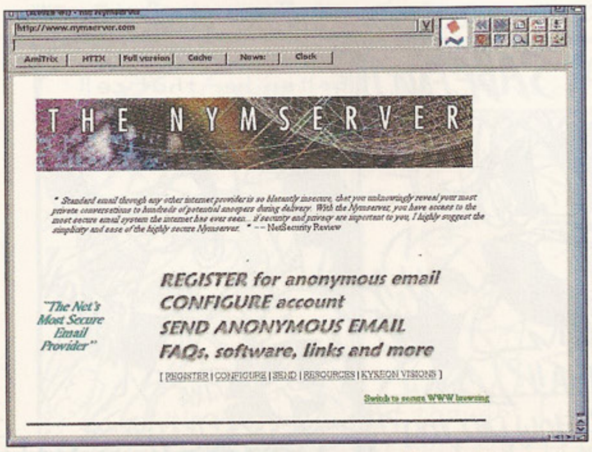


The worrying thing about Deja is that it provides a means for people to check up on your previous postings to Usenet newsgroups.

people who don't read Usenet messages regularly at all but know that sometimes, when you need to find out certain things, there is no better place to look than Usenet.

If like me you fall into the latter category, it's good to know that nowadays you don't even have to use a news client. You can read news postings directly from within certain web browsers – *Voyager*, for instance, supports online news reading.

You can also read news postings on certain websites. Usenet is where many of the latest events in the Amiga world come to light, and where members of the online Amiga community, including some key figures, air their thoughts, ideas and



Nymserver is a commercial anonymous e-mail forwarding service

opinions. You don't actually have to plough through Usenet yourself to keep track of these, because there's a website which will do it for you: surf on over to Amiga Network News.

ANN is a specialised site, but there is one site which lets you read and respond to millions of Usenet messages using the web. Point your browser at the Deja site (formerly DejaNews) and you'll find a colossal archive of Usenet articles from the last few years, and a service which enables you to read and post messages without ever having to use a news client.

HAVE WE MET?

Deja has, somewhat confusingly, recently attempted to reinvent itself as a fully-fledged online community, but in essence what it was originally and what it remains to this day is a web search engine which lets you trawl through news postings. That makes it extremely useful in its own right. If, for instance, you have a technical problem and you want to see if it's been dealt with in a newsgroup, all you need to do is enter a couple of keywords into the Deja search engine and it will produce a list of any messages posted in recent history which contain those particular words.

Want to know whether anyone's had any bad experiences using Freeserve? Key in 'freeserve problems' and you'll be presented with a lengthy list of messages from users who've encountered difficulties, and responses from people trying to help resolve those problems. Narrow the search down by adding the word Amiga and you'll still find plenty of messages.

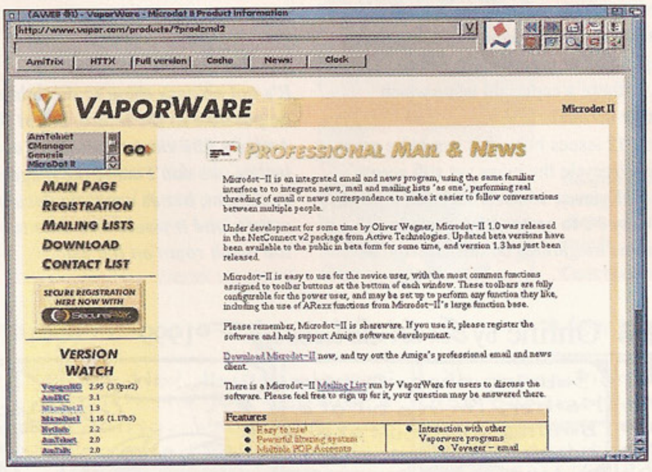
The Deja interface is somewhat awkward but the service can be so helpful sometimes that this is forgivable. Various other Internet search engines, including Altavista, Excite and Infoseek, also index news postings, but because they are first and foremost website search engines they aren't as efficient as Deja.

Incidentally, if you're thinking that there is a slightly sinister side to the existence of a Usenet posting catalogue, then you're absolutely right. Because Deja indexes all news postings it can get its metaphorical hands upon, it is perfectly possible to use the search engine to produce a complete list of postings made by a particular individual if you know their email address.

GHOST WRITER

It's not impossible that if you make particularly outrageous, unpleasant or offensive comments then they could come back to haunt you at some stage in the future. If you're going to post messages which you don't want the world and his uncle to know came from you, then for goodness sake don't use your real name and email address, and don't post using an account which is easily traceable. You could set up a Hotmail account, or use the Deja posting service (but if you do this, make sure you post messages through a proxy service, or else your IP address will show up, making you very easy to trace.)

If you're really paranoid, you can use an anonymous remailing service. When you send your message to one of these services, it will strip out identifying information and then forward it to a Usenet server. There used to be a few popular free remailers, but many of them have been shut down. However, several commercial remailers exist, such as Nymserver and Mailanon and if you're going to be posting messages you don't want traced, they could be worth considering.



Vapor's Microdot-II is an email client which also offers full news reading capabilities.

WEBSITES OF INTEREST

Usenet news e-text guide: http://sunsite.nus.edu.sg/pub/zen/zen-1.0_6.html
EFF's Internet guide, Usenet entry: http://www.eff.org/papers/eegtti/eeg_68.html
Amiga Network News: www.ann.lu
Deja: www.deja.com
Nymserver: www.nymserver.com
Mailanon: www.mailanon.com
Replay Associates anonymous remailer: http://www.replay.com/remailer/
Anonymity on Usenet: http://www.tamos.com/privacy/useneten.html



Mail*Bag*



Send your letters to: **Letters To The Editor • *Amiga Format* • 30 Monmouth Street • Bath • Somerset • BA1 2BW** or email: amformat@futurenet.co.uk – putting 'Mailbag' in the subject line.

SPARE US

- Long, looong letters with numerous points. Keep it concise!
- Emails that don't make any sense
- Questions asking why Amiga aren't advertising on ITV yet
- Technical questions which should be addressed to Workbench

SEND US

- Good ideas
- Opinions on software you're using
- Your wishlists
- Thoughts on the new tutorial
- Ideas for future issues
- General questions you want answered (not technical ones – that's what Workbench is for!)

NG WISHLIST

Here is what I believe the new Amiga must have to do well.

1 ADOBE PRODUCTS: I read that Corel have signed up which is great but I believe it's essential to have ports of *Photoshop*, *Illustrator*, etc. *ImageFX* may be brilliant but attracting users from PCs and Macs wouldn't be as difficult if the programs they use were the same.

2 NETSCAPE: This is another must. I can't believe that no-one has finished a Netscape port for the Amiga yet. After all, the source code is readily downloadable. If we can't have Netscape we need a browser that supports HTML 4.0, Javascript (1.3), CSS and Java. I work in the new media industry and I find it frustrating that I can't view my DHTML sites on the Amiga. If anyone is working on a version, include everything in the O'Reilly book Dynamic HTML so it would have the features of *Netscape* and *Internet Explorer*. This would make it the best browser on any platform. Also needed are Shockwave, Flash and RealAudio plugins. These have been around for ages but we haven't seen them on the Amiga yet.

3 CUBASE: As good as OctaMED Soundstudio is, we need some sort of "Industry Standard" music package. The Amiga is the ultimate home computer so wouldn't it be great if you could write your music at home in your bedroom with full control and when you're happy, take just the essentials to a studio and run what you've written on their PC or Mac with no problems?

4 LARGE (17", 19" AND 21") MULTISCAN MONITORS: They must be multiscan for use on older Amigas.

5 THE ABILITY TO USE TWO MONITORS: Like on the Mac where you can work on your source code on one monitor and view the output on the other instead of flicking screens. They're also great for graphics work where you work in extreme close-up on one monitor and view the standard view on another.

6 FULL BACKWARD COMPATIBILITY: This is the most essential thing on this list. Even if it means a separate Zorro card or 680x0 processor onboard we must have the

PDF FORMAT

After being told to throw loads of my mags out dating back to 1994 by my wife, it occurred to me that maybe *AF* can help with this dilemma. Is it at all possible for you to put the previous months onto the *AFCD*? You could use the PDF format and it would save me many headaches on explaining to my wife why I need to keep my Amiga mags. Is there a copyright issue which doesn't allow you to do this?

Even if it were 12 issues behind, it would be great, since we can throw/recycle the mags yet still access them though the PDF viewer which is featured in *AF*. In addition I can use my PC to access PDF if needed. I have heard that some magazines do this already, but I'm not sure which ones.

You could omit advert pages and just bung in the rest of the mag to save file sizes too.

Andy Barker
via email

It's not an easy thing to do right now Andy. It may be possible in the future, but at the moment the Amiga's PDF viewers wouldn't do a page of AF justice, we don't make the magazine as one long document, but as separate documents for every article, and it would also take too long and take up too much room on the CD.



Check out Sabrina Online at http://www.coax.net/people/erics/

ACTIVE HELP

I am writing to publicly thank Active Technologies for the help they recently gave me over a piece of software which I purchased from them. I had recently decided to go on the Internet with my Amiga 1200 so I purchased a modem, *NetConnect2*, *STFax* and Hypercom3 serial port from them after seeing them advertised in *Amiga Format*. I had no problems with anything in the package except that when I came to install *NetConnect2* I found that only the email program would work and the rest of the programs crashed as soon as I started them up. After about a number of reinstalls and a total reformat of all my partitions I came to the conclusion that I had a faulty disk. On ringing the technical help line at Active the man was very helpful and said that they would get a replacement disk out to me that day and check that It worked before sending it and I did not even have to return the faulty disk. This disk was received the next day and I am pleased to say that I am now fully up and running thanks to Active. I feel that it is this kind of service which will keep the Amiga alive and hope that it will continue for a long time and I would not hesitate to recommend Active to anyone who is looking for a good service for this excellent machine.

Kevin Eansworth
via email

ability to boot up, or switch to Workbench for older Amigas. After all if this new machine is going to be called an Amiga then it must run Amiga software! Otherwise it would be like going from a C64 to an Amiga – two different names because they are two (or even too!) different machines.

Other "nice" things to have would include a version of *Internet Explorer* just to test compatibility but this wouldn't be essential if we had *Netscape*. Anyway, the versions of IE on the PC and Mac are so different that I'm sure a third version would completely confuse them at Microsoft and it would be full of even more bugs!

Gideon Cresswell
Digital Media Developer

Okay. Here are my answers to your points in order:

1 The new Amiga might get Adobe products, but it doesn't have to. What about Macromedia – surely they'd have to be on the new Amiga from the get go, for their Director and Shockwave products? I could go on all day about what companies absolutely need to be writing software for the new Amiga, and I'm certain that, sooner or later they will. Software companies are fickle beasts – they'll write software for whatever platform offers them the best for their software, and the most profitability for their company.

2 It's not another must. I have to say I'd rather see a version of Voyager or iBrowse for the new machine that supports all the protocols in modern web design. The FreeAmiga Project has been working on an Amiga port of Netscape for many months now, but still haven't produced any results – it's not as easy as simply cross-compiling the code, as I'm sure they'd be only too glad to tell you.

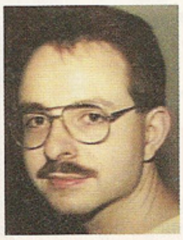
3 qv point 1.

4 If you mean monitors that'll scan down to 15kHz, to be compatible with older Amigas – why? Besides which, the new Amiga promises to be able to hook up to a variety of output devices.

5 You can already use two monitors on an Amiga. Hook up a graphics card and plonk a monitor on the output from the card and on the output from your Amiga. Voilà, two monitors, one Amiga.

6 There is no guarantee that the new machine will be called an Amiga, but the best compatibility will be to just use your existing Amiga alongside.

Keep those suggestions and ideas coming though, folks!



Marcel Beck created YAM as freeware for everyone.

YAMTASTIC

I have used YAM since the first release and find it excellent. Marcel Beck has spent over three years of his time constantly improving this great Amiga mailer and what does it cost? Absolutely nothing. He hasn't asked for a penny.

Today I have slipped a crispy £10 in an envelope addressed to: Marcel Beck, Hammerßtrabe 4, 4414, Füllinsdorf, Switzerland. As a thank you from me for all his time and effort. Wouldn't it be nice if all us UK users of his work did the same. Well done Marcel.

Derek via email

We'll add our gratitude to that, since we rely heavily on Marcel Beck's excellent email package for all our email. However, he's said on numerous occasions that he didn't want any money for it, so anyone interested in sending him anything might consider something he'd really like, rather than cash.

SUGGESTIONS

I just finished reading *AF102* and I must say it was a joy reading it. I especially liked the Art of Noise article, the serious section and the creative. I have some suggestions for future issues.

I would like a tutorial on graphics card programming. I know that there are a lot of people out there who wants to know how to fully support 16- and 24-bit windows as well as supporting AGA, CyberGraphX and Picasso for 8-bit graphics.

A MUI programming tutorial wouldn't be bad either, but maybe you have already had that in some previous issue? When I think about it, I'd like an AHI tutorial too.

I would like to have tips about how to make my Amiga look better, on the outside that is. I mean, I haven't seen any good looking towers to buy so I obviously have to do it myself. I spray painted my A4000 desktop and keyboard black and then handpainted the letters on the keys in white, which looked quite good until the paint started to fall off.

Jonas Hulten

AF102? Surely you mean AF127? I'm glad you liked it whichever issue it was you read. I'm not sure that a series on programming for graphics cards would be welcomed by the majority of our readers, but it's taken on-board, and yes, we did cover MUI quite extensively back in AF103-109, although that was nearly two years ago now. We'll certainly do another when the new version of MUI finally surfaces.



Do you have an issue (cringe!) you want discussed? Then get in touch.

Continued overleaf ➡



Check out Sabrina Online at http://www.coax.net/people/erics/

NICE IDEA?

For a while now I have had this crazy idea of creating some kind of external application which, when installed, would complement the OS by preventing the computer from crashing, or at least minimising the damage caused by an error. It could also offer advanced features such as being able to actually correct the error and leave the user to continue working. The problem I have got is that I am not a programmer and probably never will and so am wondering if there is anybody out there with whom you may know of who would be interested in starting such a project.

Programs like this do exist on the PC for Win95/98 but they are usually very simple in usage and don't offer much shielding against errors.

Thanks in advance,

T.Durbin
via email

Hmm, okay. There are programs out there that can make your machine slightly more organised in the way it operates, such as Executive or Enforcer, but while they'll give you info as to why a program isn't working, they won't fix the problem.

EDUCATING WILLIAM

I'm a retired, disabled ex-serviceman (31 years RAF), I have been an Amiga user for over five years and I own two A1200s, my daughter also owns an Amiga A1200.

Over the last few months a friend, Mike Alexander, and I have been assisting the local school, William Farr Comprehensive, Welton, Lincolnshire with their two Amigas. The pupils use the Amiga computers for video, art work, animation and DTP.

Before we started upgrading, the school was using an A4000 030/25 2MB Chip RAM and 2MB Fast RAM and a stock Amiga A1200 with 2MB Chip RAM, both with an 80MB hard disk. The A4000 has *ScalaMM200* installed and a Genlock fitted to a digital camera and even with such a limited set up they have produced excellent work. The A1200 had a mono hand scanner attached and again the work produced was good.

We've upgraded the A4000 with OS3.1, 16MB RAM and a replacement clock battery. For the A1200, we've installed OS3.1, a Blizzard 030/50MHz accelerator with 16MB Fast RAM, a 120MB internal IDE 3.5" hard disk and a colour hand scanner, all parts provided secondhand from Amibench (thanks Mark Wilson aka tecno).

I've also donated two Amiga mice and mouse mats and I am still seeking a graphics card for the A4000. This term, the school is planning for a pupil Amiga home user group to meet once a week in the art department so that assistance and advice can be given by myself and Mike Alexander.

Michael Domoney, at WoA

This sounds great Mike, it's nice to see the two of you are helping out with the school, and even nicer that they've chosen the best machine for the jobs they want to do.

NO FREE LUNCH

I must take issue with your reply to Steve Hargreaves email in issue 127.

You claim that "Freeserve have their problems like all free ISPs… you get what you pay for". This suggests that paid for ISPs have no problems with systems or downtime. I can accept that the new free providers have more problems than long established charging ISPs, but the tone of your reply implies that subscription service is a panacea for Internet users.

As a member of the afb group I have read of problems with both Demon and Prestel, two of the longest established and most popular services.

There seems to be a good deal of snob value attached to paying more than is needed for Internet service. I would not presume to contend that free providers offer perfect service for all users, but nor would I suggest that simply opting to pay a monthly standing charge guarantees robust connection and superior service, as in my experience it clearly does not.

Finally, to anyone not on the afb list, subscribe today, you really are missing a treat!

Anthony W. Prime
Crewe



Well, they got half the name right – it's free.

I'll stand by what I said Anthony. Demon recently had their headquarters in Finchley flooded to the third storey – I only knew about it after the event, and hadn't noticed any difference to the service I received. It's true that it may be bad to damn Freeserve simply because of the fact that they are a new company, but I don't personally believe that their service will get better than it is now.

TONY? BORING?

I think I've given "Vital Horgan" a chance and I just don't see the point in continuing it. I've been reading the column ever since it appeared. I used to be an avid CU reader and I like Mr. Horgan's work - this is not his best. I just don't think "Vital Horgan" adds anything significant to the mag. I'd prefer the space replaced with some more "Other News" or something similar. It's just too boring for me. However, I loved the "Art of Noise" feature. Much more interesting!

Steven Solie
via email

Guess what? Due to popular demand, you've now got me wittering on in the news section too!

TOWERING BALLS

I recently came back from Florida and while I was there, on route number four, I noticed in the distance some sort of tower which looked just like the Amiga boing ball. Unfortunately I didn't have my camera handy so I did a sketch of it, from memory, when I came home to England. Obviously some American was inspired by the Amiga boing ball, either that or he/she liked the clash of red and white.

Also, whilst I was at a students briefing meeting at South East Essex College for Media Studies I noticed an Amiga 2000 in the video editing room (either that or some PC manufacturer decided to copy the A2000 design.)

What's the big idea of dropping the subscriber's newsletter and disk? You used to have some great competitions, not to mention some really useful utilities on the disk. I definitely think you should keep this otherwise what's the point in subscribing? Only that it's cheaper.



Things are getting strange, I'm starting to worry...

STORM BREWING

While I liked the most part of the recent *Amiga Format*, I definitely did not like the "C" article. By printing a big graphics of speed-comparison of the Dhrystone value of the 68k versions – where StormC is really the weakest of the tested compilers – the impression was given that StormC would be the slowest compiler. If instead the PowerPC versions would have been tested, we would have given a result like this:

1. StormC and EGCS joint first
2. VBCC

StormC is in its most recent version the best PowerPC compiler for the Amiga, as can be seen when trying benchmarks. The same is true about executable sizes. PowerPC executables made with EGCS are gigantic, while the StormC executables are very small (actually smallest of all available PowerPC compilers).

Steffen Häuser, via email

Since Richard wrote the piece, I thought he should be the one to reply:

I am sorry that you did not like our C comparison feature. However, the article did state that there was not enough space to compare PPC features of the tested compilers and that such benchmarks are not definitive.

The dhrystone program was chosen as a test of code generation because resultant performance is very obviously dependent on optimisation quality and because it is written in portable C and hence easy to compile with the different systems. Having said that, StormC was the only compiler that required the original K&R code to be converted to ANSI before it would produce a non-crashing executable.

I don't dispute that StormC generates good PPC code, but I see no evidence that it is the best PPC compiler for the Amiga. For example, the same dhrystone example compiled for PPC using StormC at optimisation level 6 yields a score of 329,000 dhrystones/sec and an executable size of 36,228 bytes. VBCC in WarpOS mode and O2 optimisation achieves 360,000 dhrystones/sec and 31,008 bytes. (The tests were performed on a 200MHz 603e and used 100m iterations through the benchmark). In this case, VBCC's output is 10 per cent faster and 10 per cent smaller, so negating your above claim.

I have not included figures for egcs because there is no version which properly supports WarpOS yet.

Apart from that, keep up the good work! *AF* is really looking good and forever improving!

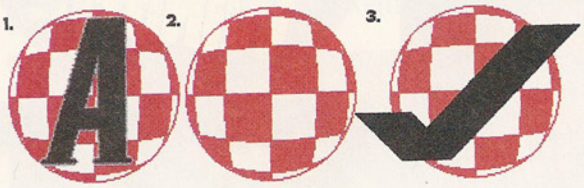
Elliott Bird
via email

The point of subscribing to AF is that a) you save 44 per cent or possibly more if you're overseas; b) you get the issue a week early; and c) you're guaranteed to receive every issue of your subscription. You want the moon on a stick, you do.

TOWERING BALLS PT. 2

I am writing concerning the new Amiga. I like the designs in *AF126* but I feel that some people would rather have a tower or desktop Amiga since it would be better for office use and probably more upgradable. Perhaps the Amiga could go on sale with a choice of tower, desktop or whatever design Amiga choose to use. I have also enclosed some of my Amiga logos for you to look at.

Jamie Underwood
Bucks



Jamie, those designs were for the desktop machines. They weren't for the set-top boxes, the car-based computers or the Amiga-based wristwatch phone either. See?

As pretty as these balls are Jamie I think you could do better. Why not design your own tattoo?

MAD TAT!

Hello there, here's the pic of my C= logo tattoo as promised. Print it in the mag and we'll all be happy.

It was done in July by Pecka at his own studio in Östersund, Sweden (+46 63 127780) and it hurt like hell!

My homepage is
http://hem1.passagen.se/zman/main.html
http://hem1.passagen.se/zman/amiga/index.html

Johan Rastén
via email



So, whose going to compete and get a boing ball then? Printable pictures only please!

HOW TO GET AHEAD IN ADVERTISING

Why don't you try giving, for one month only, a discount price on advertising so that OnLine PD, Underground PD, Blittersoft, Weird Science etc can advertise? Basically by offering discount prices for all those companies you can bump up the number of ads in the mag and then we could get more editorial pages of your fantastic mag.

Also, in *AF128* Terry Green wrote in saying he had seen Amigas on TV (*The Bill*). Well, on channel 5 about six months ago there was a programme on piracy. The police raided someone's house and there was an Eyetech Tower next to a monitor and when they opened up a cupboard to show his stock of PSX games there was a bloody great white box with the Amiga logo on it.

Can't wait until next months *Amiga Format*.

Liam Bramwell
via email

We already do discount the prices for advertising in AF – it's certainly a lot less expensive now than it used to be when a single page colour ad could set you back £2000…

PLEASE RELEASE ME

In your recent 10th birthday article I noticed many people who used to work on AF that look a lot like famous people. Graeme Sandiford looks like Eddie Murphy, Colin Nightingale looks like Toadie from Neighbours, Richard Drummond looks like the guy from the AMozillaX interview sitting next to Ben Vost and finally Trenton Webb looks like Lee Hurst. Are you sure that the old and new *AF* squad aren't really living double lives?

Also what's going on at *AF*? In issue 126 it said the September issue was released on July 31st. So on the 31st I go out and buy it. Flicking through I notice a big page "Come and see us on stand 118" talking about the WoA, ermm that was a week previous. Then seeing the Eyetech advert it says something along the lines of if you can't make it to WoA we'll be sorry not to see you but you can have 50 per cent off our carriage price for goods ordered between the publication of this issue of *AF 127* and July 31st. Eh? So you get from July 31st - July 31st, very good offer! I know subscribers get the issue a week early but can you tell us the 'real' release dates from now on?

amiga@thefree.net

They are the real release dates, but if you'd been at WoA you would have seen the issue there, and if you subscribed to the mag, you'd have possibly got it on the Friday before the show, as well as it costing you a lot less per issue.

THANK GOODNESS FOR WINDOWS!

Whilst on holiday camping in France my camera went wrong, again. It was a fault that had kept on recurring since it was dropped some years ago, a small part of the autofocus mechanism keeps coming unstuck. Originally it had been held in place by melting the plastic around a small metal part, but having dismantled the camera this time, I realised I was not going to be able to do this any more, as there was hardly any plastic left.

After a bit of thought I realised that all was really needed was a new bit of springy wire stuck to the mechanism, but where to get such a thing on a camp site? Then I remembered I had chucked some old windoze disks that someone had thrown out, into my car, for reuse as data disks on my Amiga. Moments later I ripped off the sliding protective cover and there it was, the perfect spring! My camera has worked fine ever since, so windoze does have its uses after all!

John Dyson
W.Yorks

PC software can come in useful, eh?

DESKTOP SCSI

The purpose of this note is to let other non-tower users know that it is easily feasible to use the Typhoon Mk2 with SCSI in a desktop A1200. I personally do not like towers, perhaps there is someone out there just like me (heaven forbid).

Two small tips for desktop users: 1) I use curtain-rail brackets as feet on my 1200, these are simply held in place with double-sided cellotape sticky pads, they allow plenty of clearance between base of keyboard and desk and also assist in cooling. 2.) A simple free-standing shelf the width of the keyboard gives extra desktop space for my floppy drives and also gives concealment and protection to all the cables from the rear of the keyboard.

My next purchase will be a half-decent modem when I can afford it.

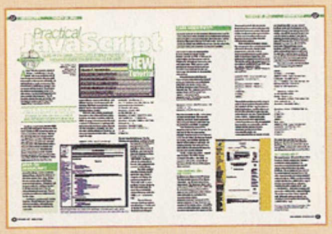
By the way, I bought my 1200 on 15 December 1992 and have been buying *AF* ever since. Although I am no whizz-kid you have taught me most of what I know and I am still an avid fan. Many thanks.

John Hunt
via email

HOW LONG FOR JAVASCRIPT?

Now that all three major browsers support JavaScript in some form or another how about a feature or tutorial on what it is and how you can make use of it effectively, or even just a "cut and paste" JS website on the CD would be useful for Amiga users wanting to use JS to its full potential.

Chris Korhonen
via email



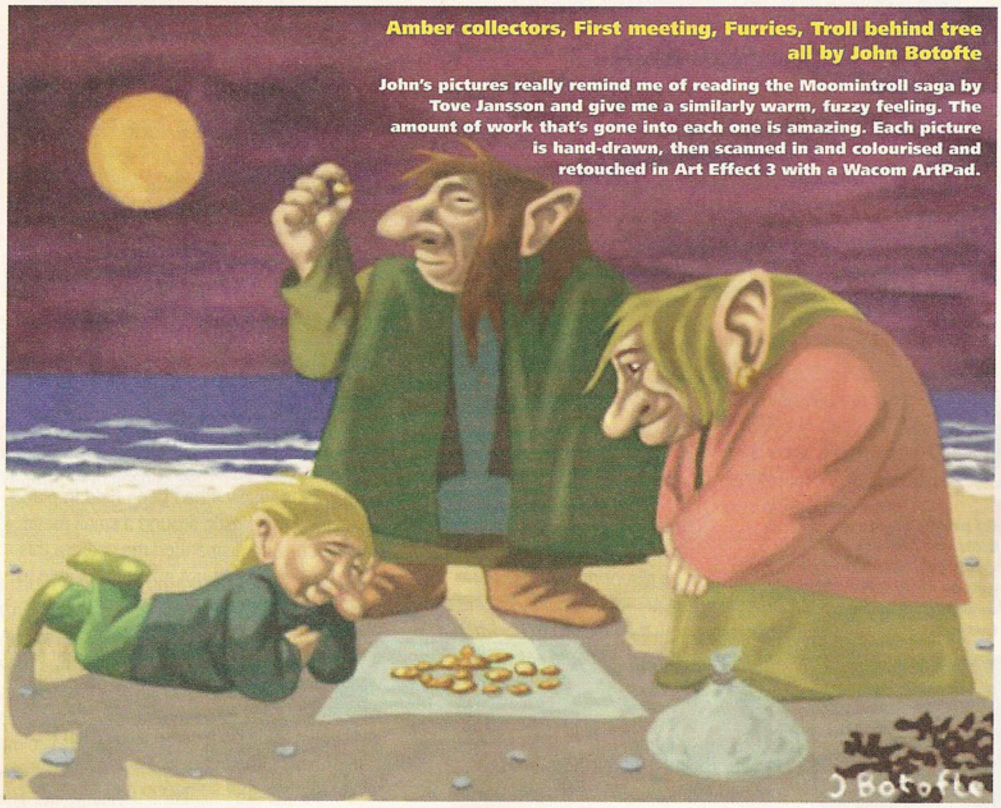
Palaver with Java? Turn to page 64 and get yourself out of a mess.

We're way ahead of you Chris. Neil Bothwick has honed his best writing technique to present us with a stunning new JavaScript tutorial starting this issue. It's got code you can paste into your pages, so you don't have to retype, and it will cover everything in a modular fashion. It's great.

The Gallery

On the CD -ReaderStuff-/-Gallery-

Ben Vost has a far away gaze in his eyes and a contented smile on his face as he peruses your art

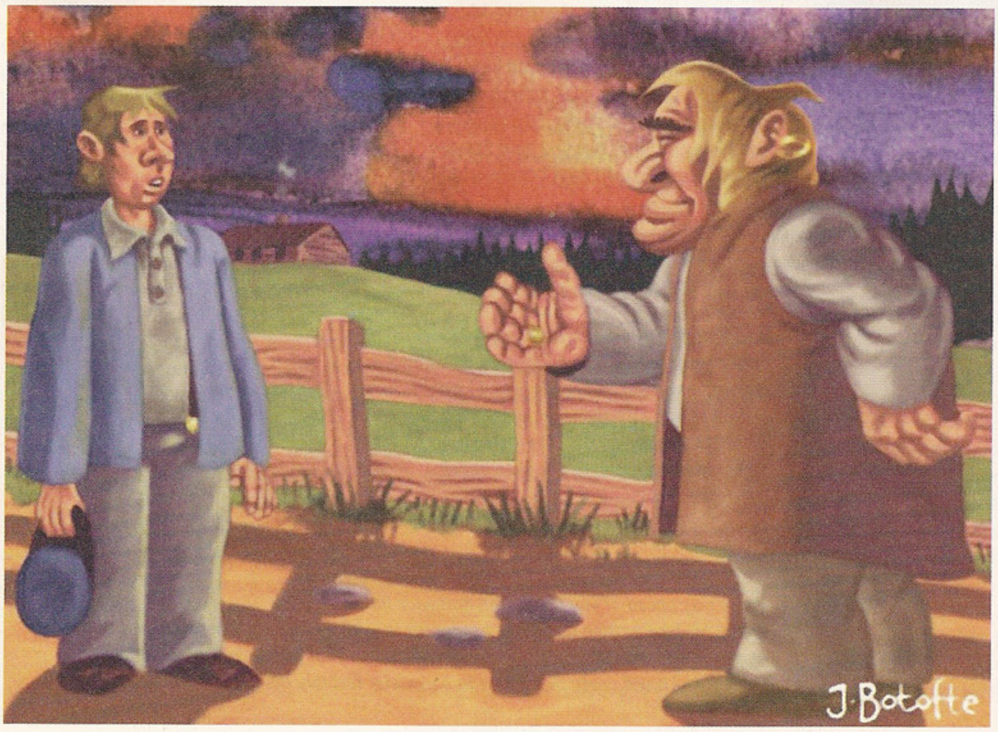


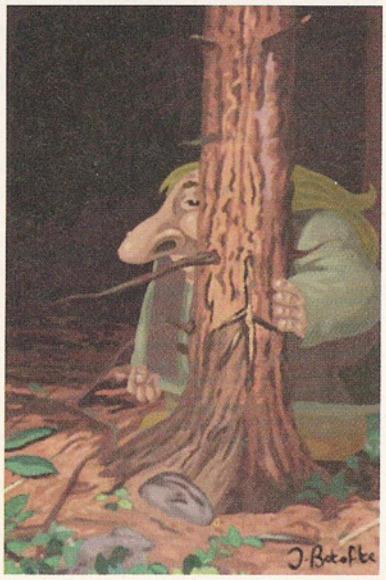
Amber collectors, First meeting, Furries, Troll behind tree all by John Botofte

John's pictures really remind me of reading the Moomintroll saga by Tove Jansson and give me a similarly warm, fuzzy feeling. The amount of work that's gone into each one is amazing. Each picture is hand-drawn, then scanned in and colourised and retouched in Art Effect 3 with a Wacom ArtPad.

Sponsored by Amiga £50 WINNER!





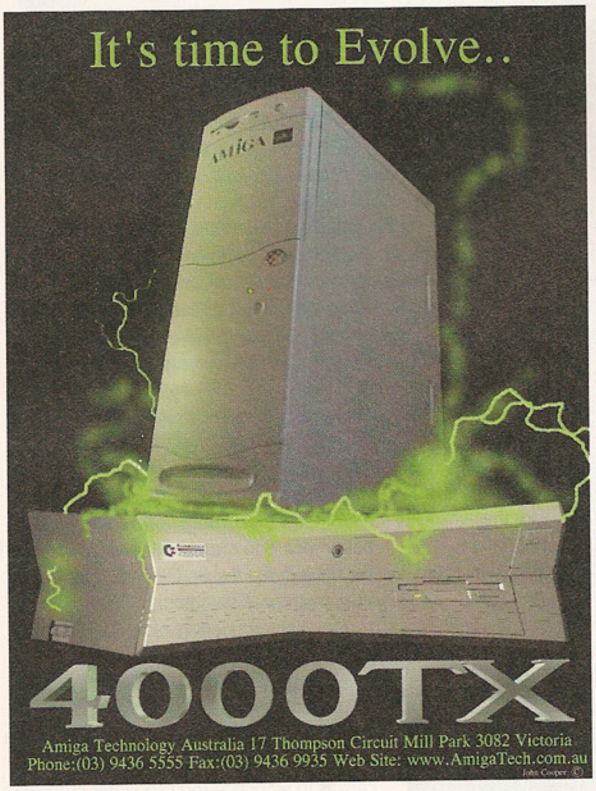






4000TX, Alyss, G3Final all by John Cooper

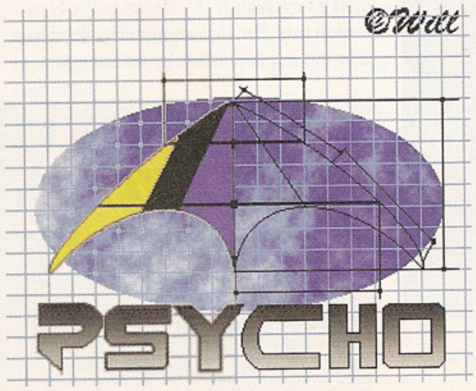
John Cooper won our Gallery prize back in AF124, and came incredibly close to winning it again this issue, but for John Botofte's trolls. Check out the WB_Backdrop drawer in his drawer on the CD too, since it contains some very nice backdrops that could have been entered as pictures in their own right.

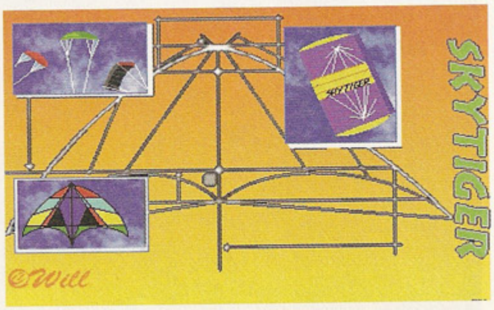




Underground2 by Kevin Walker

A nice pic using Cinema 4D – shame you didn't use a newer cover image Kevin!





Kite, SkyTiger all by William Lamburn

William is obviously a keen kite fan as his pictures show. The bright colours and simple shapes really work well at Lo Res.

CONTRIBUTIONS

If you'd like to enter your work (and it should be only your work!) for the Gallery section on the CD and the pages in *Amiga Format*, read the Reader Submissions advice on the CD (you can find it in various places) or simply make use of the form that can be found on the CD pages of this issue.



AFCD 46

Richard Drummond illustrates the features of PerfectPaint, checks out iBrowse 2.1 and offers an exclusive look at three Crystal demos

PICTURE PAINT V1.1

-Serious-/Graphics/perfectpaint

The Amiga has always led the field when it comes to bitmapped paint packages. We've had the pioneering *DeluxePaint*, the steadfast *PersonalPaint* and the quirky but gorgeous *TVPaint*. But these three heavyweights had better make room in the palette box for one more: *PerfectPaint*, the new, free pixel pusher from Frenchman Georges Halvadjian. And while the new boy may lack the breeding of its commercial rivals, it more than makes up for it in features.

PerfectPaint packs all the familiar drawing tools you would expect plus an ARexx port, animation facilities, multi-level undo, anti-aliasing, colour effects, text effects, convolves, distortions and more.

PREPARING THE GROUND

PerfectPaint is a complex piece of software and makes significant demands on your computer's hardware. The minimum requirements to run it are Workbench 3.0, a 68030 processor and an FPU; a graphics card is not necessary, but highly recommended.

Installation is simple: just drag the *PerfectPaint* drawer from the CD to where you wish it to live on your hard disk. The program needs the XEN font for its interface, so you must copy that into your system fonts drawer if you don't already have it. This font is provided on the CD every issue, so the easiest way to install it is to open up a shell window and type:

```
Copy AFCD46:fonts FONTS:
```

The final requirement is that RexxMast (the ARexx interpreter) must be running on your system. Hopefully by now, everybody should have set up their machine so that RexxMast is started automatically at boot time. If not, simply drag the RexxMast program from your the System drawer on your boot disk to the WBStartup drawer. You're now ready to go.

> *PerfectPaint packs all the familiar drawing tools you would expect plus animation facilities, multi-level undo, colour effects, distortions and more*

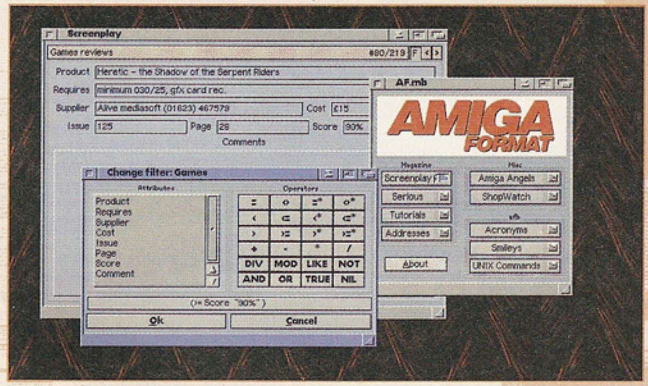
WHAT'S NEW

Last issue saw the first appearance on an *AFCD* of the online *Amiga Format* database, AFBase (see +System+/Info/AFBase). Version 1.0 newly graces the coverdisc this time around and it features listings of all games ever reviewed within the pages of *AF*, most of our serious reviews and some tutorials. Also included are our ShopWatch and Amiga Angel services and some handy guides to acronyms, emoticons and common UNIX commands.

Searching for an item in AFBase is simplicity itself. You can perform a basic search by selecting the 'Search for' option from the Table menu and entering the item you are looking for. A more powerful technique, however, is filtering, and this is perhaps best explained with an example. Suppose you wish to display all games that have received an *AF* Gold award. Open the ScreenPlay database and select 'Change filter' from the table menu. Then enter

```
( >= Score "90%" )
```

in the string gadget and select OK. The records then displayed in the ScreenPlay window will be only those with a score greater than 90 per cent. Only those records for which the above expression evaluates as true for get through. See the MUIBase guide in +System+/Tools/WB/MUIBase for more information.



Amiga Format puts even more information at your fingertips with AFBase.

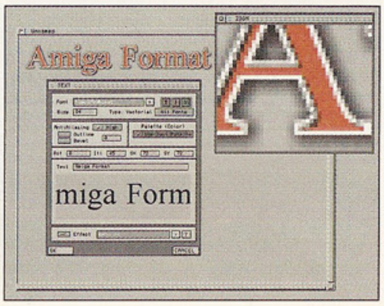
SET UP YOUR EASEL

The first thing *PerfectPaint* does, after you launch it by double-clicking its icon, is to ask you what screenmode you want the program to run in. Now, *PerfectPaint* requires a screen size of at least 640x480 pixels. If you only have a TV or 15kHz monitor attached to your machine, then you'll have to choose a PAL mode. Standard PAL only supports a physical size of 640x256, so you'll end up with a larger virtual screen which you can scroll around with the mouse pointer. This will give a very restricted view of your work, so perhaps a better idea is to pick an interlaced mode and put up with the flicker. Either that, or buy a VGA monitor. Also note that *PixelPaint* only supports screen depths of up to 8 bits (256 colours).

When *PerfectPaint* has loaded you will be presented with a blank screen, occupied only by the toolbox window. Before you can do anything useful you have to open a canvas to work on. You can either choose to start a new picture, by selecting the New option from the Picture menu, or load in an existing one from disk, by selecting the



Providing you use some decent colour reduction software, PerfectPaint can produce great results. This was originally a true-colour image.



KNOW YOUR TOOLS

Good artists, whether of the conventional or digital variety, must be familiar with their tools. *PerfectPaint* supplies you with a range of drawing tools, each which may be applied with the brush style, colour and effect of your choice.

Brushes

1 BRUSHES. Left click on a style to select it.
2 SWAP BRUSHES. You may have two brushes defined at one time. Right-click here to swap between them.

Drawing tools

Each tool is left-clicked once to select it. Some tools support several modes, so left-clicking again will cycle through the different modes. Tools with a dog ear (a triangle in the upper left corner) have a menu to change their settings which can be popped up by holding-down the right button.

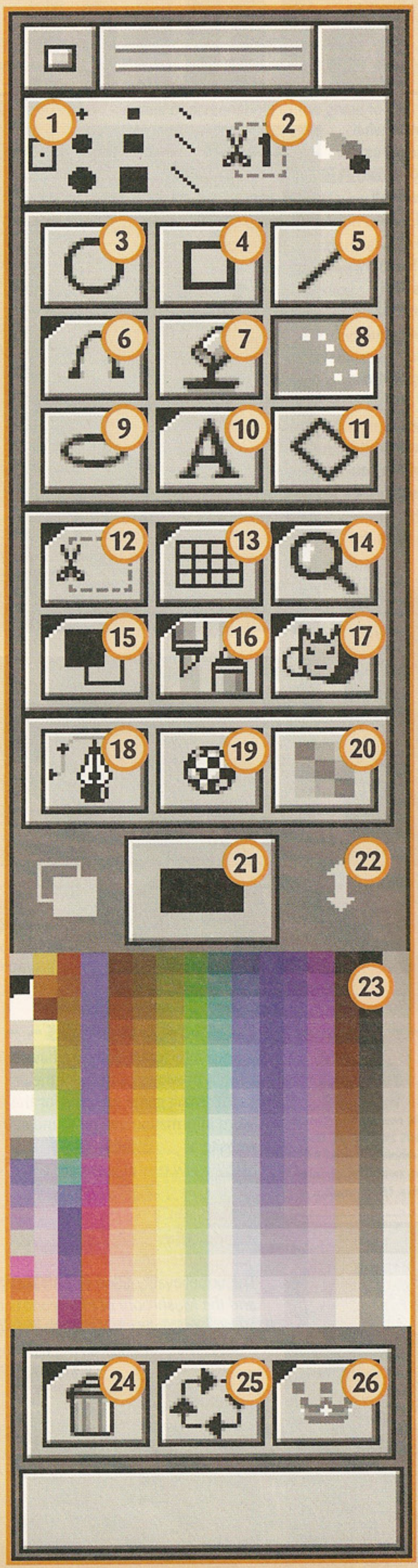
3 CIRCLE. Modes: outline, solid, effects.
4 RECTANGLE. Modes: outline, solid, effects.
5 LINE MODES. Modes: line, effects.
6 SPLINE. A curve to you or me. Modes: outline, solid, effects.
7 FILL.
8 POINT. Modes: freehand, joined, filled, effects.
9 ELLIPSE. Modes: outline, solid, effects.
10 TEXT.
11 POLYGON. Modes: outline, filled, bezier, bezier filled. In bezier modes it attempts to fit curves through the corners of the polygon.
18 VECTOR. This is not implemented yet.
19 WARP. A Power Goo-like dragging tool.

Other tools

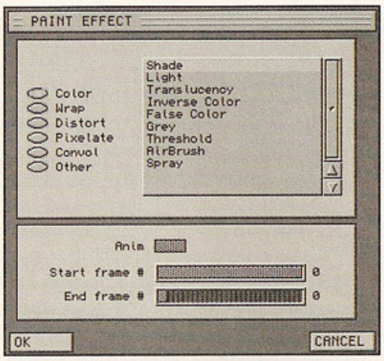
12 CAPTURE BRUSH. Pick up a rectangular area from the page to be used as a brush.
13 GRID. Allows drawing only at fixed points on the page for easier positioning.
14 ZOOM. Magnifies a selected area of the page.
15 SPARE PAGE.
16 EFFECTS. Right-click to select an effect to apply to all drawing tools.
17 STENCIL. Prevents selected colours on the page from being over-written.
20 ANTI-ALIASING. Smooths jagged lines.
24 TRASHCAN. Left-click to clear the page to the current background colour.
25 UNDO. Left-click to undo the last operation. The last 10 operations are remembered.
26 AREXX. Right-click to select a script, left-click to execute it.

Palette

21 CURRENT COLOURS. The inner rectangle is the foreground drawing colour, the outer the background. Right-click to pop-up the palette requester.
22 SWAP FOREGROUND AND BACKGROUND DRAWING COLOURS.
23 PALETTE. Left-click to select the foreground drawing colour, right-click for background.



Some symbols on the tool bar are self-explanatory but others have to be tried and tested before you're sure of what they do.



PerfectPaint has a powerful set of drawing effects.

Load option. If you opt for the former, *PerfectPaint* will pop up another window asking what size canvas you want. Either select one of the default options with the buttons on the right or select the custom option and type in the desired sizes in the string gadgets provided.

PerfectPaint loads pictures using AmigaOS's datatypes system. Datatypes are plug-in modules which allow programs to recognise many different file types. The only picture datatype shipped with AmigaOS is one for ILBM (IFF) files, so if you want to handle other picture formats – such as GIF, JPEG or PNG – you must get the appropriate datatype. These can typically be found on the Aminet or on *AFCD*s in the -Serious-/WB/-Datatypes-drawer. To be able load full-colour images into *PixelPaint*, the datatype must perform the reduction to 8-bit for you. The alternative is to use some external software to do the job. For example, *PPaint*'s colour reduction facilities are excellent.

IBROWSE 2.1 DEMO

-Serious-/-Commercial-/IBrowse2.0-020+

A flurry of development has taken place of late in the previously slumbering Amiga web browser market, and the two big guns, *Voyager* and *iBrowse*, are ready to duke it out. We gave you a look at a pre-release version of *V*[3] on *AFCD44*, but the guys at Vaporware have definitely been beaten to the streets by Omnipresence and HiSoft: *iBrowse 2* is officially here. And this is the demo to prove it.

The biggest addition to *iBrowse 2* over earlier versions and one that Amiga users the world over have been clamouring for is JavaScript support (for more on JavaScript, check out our new tutorial series beginning on page 64). But there have been some real innovations, too. It is now possible to view more than one website in a browser window and quickly swap between them a the tab gadget. Another new feature is the possibility to configure different browser settings for different sites. For example, suppose there's a site at http://www.silly-site.com/ which you regularly visit but never wish to view the images for, but all other sites you do. This is a piece of cake with *iBrowse 2*. Open the

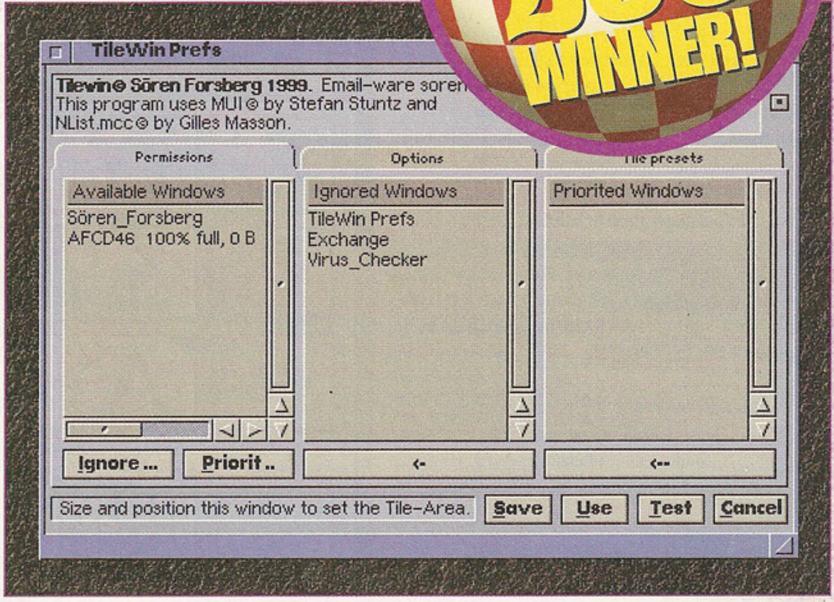
Continued overleaf ➡

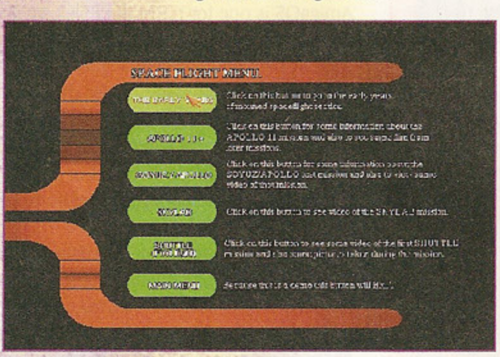
Your Stuff!



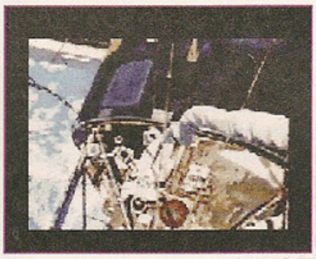
Once again, *Amiga Format* readers have proved what a creative bunch of people they are by sending us some outstanding contributions for this CD. I have had a tough old time trying to pick a winner – I was half tempted to pick Lionel Woodbridge for the second installment of his interactive, Scala-created *Space Flight*. But no. Instead, the issue's lucky winner is Sören Forsberg.

Virtual desktops can become just as unruly as real ones: you could never find the window your looking for underneath all that clutter. Wouldn't it be nice if you could get your Amiga to tidy it up for you? Well, now you can thanks to a neat little tool that Sören has sent us. *TileWin* is a commodity that, when activated by its hotkey combination, will magically sort the windows on your desktop into an orderly arrangement. Not only that, but it is supplied with an easy to use preferences editor, where you choose to set a tiled or cascading style for positioning windows, select which windows not to arrange or even elect priority windows which will be moved to the front if possible. For this sterling work Sören gets £50.









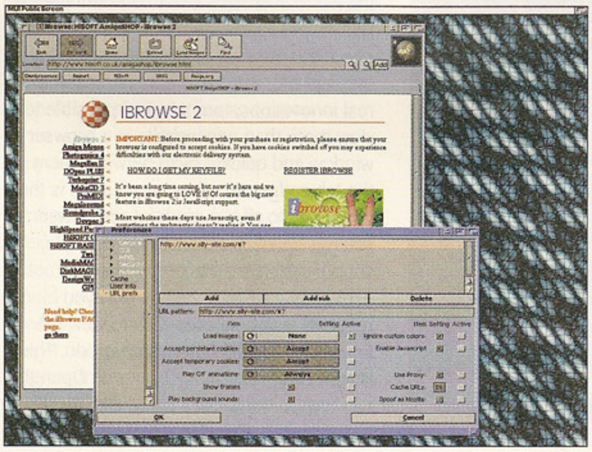
(Above) With TileWin you'll never have to worry about an untidy desktop again.

(Left) Enjoy space without the hard training and dried food.

settings window, select the URL prefs page and enter the URL pattern as http://www.silly-site.com/#?. Next, checkmark the Load images option and set it to None. Sorted.

This demo is restricted to 30 minutes of use. It also has no support for ftp:, gopher: or mailto: transfer methods and is limited to having only one browser window open with one website per window and only permits a maximum of two network connections. The demo may upgraded to the full package by ordering a keyfile from HiSoft. See http://www.hisoft.co.uk/. Note that *iBrowse 2* must be installed to your hard disk for use, but this is a simple matter with the script provided.

Get ready for the next round of the browser wars. In the red corner we have iBrowse2...



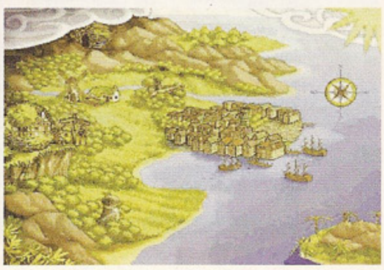
CRYSTAL DEMOS

Crystal Interactive Software have supplied us with previews of three of their forthcoming game releases for the Amiga. More information can be found at their website at http://www.crystal-software.com/.

GILBERT GOODMATE

-ScreenPlay-/Commercial/Gilbert_Preview

The unbelievably-titled *Gilbert Goodmate and the Mushroom of Phungoria* is a point-and-click adventure in the *Monkey Island* mould. The plot involves the kidnapping of the nation's legendary saviour, a gigantic mushroom, by person or persons unknown. You play the role of Gilbert. Your grandad was custodian of the fabulous fungus and is now about to be executed by order of the king for his carelessness. Only you can save his life by finding the stolen 'shroom.





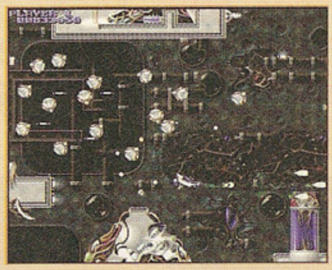
Crystal has given us an AVI movie as a preview of Gilbert. To view it on your Amiga, please make sure you have set the AVI filetype in the AFCDPrefs program to a suitable AVI player such a CyberAVI or MooVId. A demo version of MooVId can be found on the CD in the drawer +System+/Tools/Graphics/MooVId-Demo which you may use to view the animation.

It looks such an idyllic setting, doesn't it? But somebody in that world is evil enough to kidnap a mushroom!

EXCLUSIVE T-ZERØ DEMO

-ScreenPlay-/-Commercial-/T-zerØ_Demo

T-zerØ is clickBOOM's latest release, an old school shoot-em-up that Ben sang the praises of in *AF128*. But if Ben's review was not persuasive enough, get a taste of the action with this exclusive playable demo. It's definitely not for those of a nervous disposition.



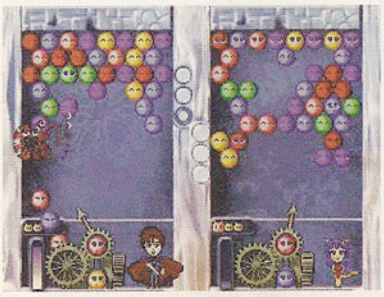
The action is fast-paced and furious in T-zerØ, clickBOOM's AF Gold-winning blaster.

BUBBLE HEROES

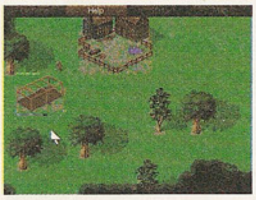
-ScreenPlay-/-Commercial-/BHDemo

Bubble Heroes is an update to that classic, *Puzzle Bobble*. This demo requires a lot of free Chip RAM to play. You will probably need to start your machine with no startup-sequence and then enter the following lines into the shell, each followed by the RETURN key, to play it.

```
SetPatch
Assign ENV: RAM:
Mount CD0:
CD CD0:+ScreenPlay-/-Commercial-/BHDemo
Execute BubbleHeroes
```



A cute update to and old favorite: Bubble Heroes. Who's the bat, though?



War is conducted in the up-close and personal way in the Dark Millennium.

THE DARK MILLENNIUM

-ScreenPlay-/-Commercial-/TDM_SHOTS

Exact details on The Dark Millennium are sketchy at the moment, but we do know that it is to be a strategy war game with a fantasy setting. Crystal have provided a series of screenshots of the game to get you in the mood.

AMIGA GAME HEAVEN

The chaps at Amiga Game Heaven have provided us with a special edition of their website for the CD. You can peruse it by double-clicking on the Start_Here icon, surfing to the Essential Websites section and following the AGH link.

For those who have not visited this site before, it is an invaluable resource for the Amiga gamer. It is a database of hundreds of classic Amiga games with reviews, tips and patches to get them installed and working on more modern Amiga hardware. A number of their reviews are by Amiga celebrities, so if you want to know what Tony Crowther thought of *Dungeon Master* or read David Braben's opinion of *Populous*, then this is the site for you. They are also looking for more contributions, so if you want air your views on a game, why not send them in to AGH. Details are on the site.



DISCLAIMER

This *AFCD* has been thoroughly scanned and tested at all stages of production. We recommend that you always run a virus checker on ANY software before running it. Future Publishing Limited cannot accept any responsibility for disruption, damage and/or loss to your data or your computer system which may occur while using this disc, the programs or the data on it. Ensure that you have up-to-date backups of data contained on your hard drives before running any new software. If you do not accept these conditions, do not use this disc.

DISC NOT WORKING?

If your *AFCD* is defective, please return it to the address below. Please make sure you have followed our installation procedures correctly to ensure that there is no physical problem. Please send us the *AFCD* along with a description of the fault (not forgetting your name and address). A new working version should be returned to you within 28 days. The return address for faulty discs is:

TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH • MERTHYR TYDFIL • CF48 4YB

Your *AFCD* should only need replacing if the CD itself cannot be read. If you're experiencing problems with an individual application, phone our technical support line This is open between the hours of 2pm and 5pm every Tuesday.

Tel: 01225 442244 Fax: 01225 732341

Email: amformat@futurenet.co.uk

(Please remember to put "Coverdisc" in the subject line.)

Please note that the helpline staff provide assistance with technical problems directly related to the CD and cannot provide training on the software or hardware in general.

We want your work!

You can either send it to us on floppies, Zip disks or CDs (we do take other media formats too). If you are going to send us a multiple floppy backup of your work, please use the version of *ABackup* we supply on the CD in the +System+/Tools/Disk_Tools drawer. We'll return any Zips you send us, so don't worry about getting your disks back.

If you have any further queries about how to send your software in then consult the Submissions Advice on the CD (in Start_Here!, or in the ReaderStuff or +System+/Info drawers).

Files you send this month will probably appear on *AFCD48 – Amiga Format*'s January issue.

Please tell us:

Your name: ....

Your address: ....

....

Your postcode: ....

A contact number or email address: ....

Your signature: ....

In respect of all material which forms my reader contribution to Future Publishing's Amiga Format I hereby warrant that:-
(1) the material is original and does not infringe any other material or rights;
(2) the material does not contain any material which is defamatory, obscene or indecent and is exempt from classification under the Video Recordings Act 1984;
(3) that there are no legal claims against the material provided;
(4) that I have full power and authority to provide this material to Future Publishing.

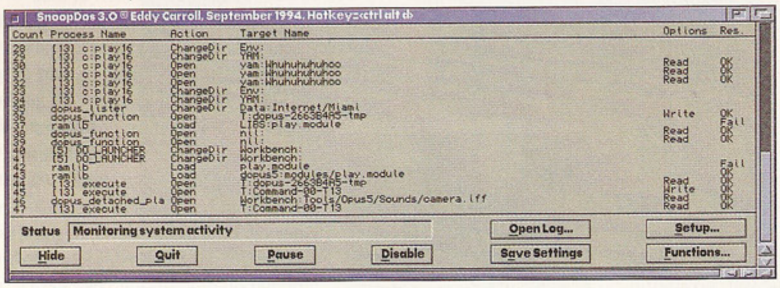


Serious Disk

Errol Madoo offers you ways to stay organised, the return of the virus killer, a guide to the World Cup and a program to please those Amiga users with PC's

SNOOPDOS

SnoopDos is a "must have" utility that allows you to monitor the system operations that are carried out by programs on your Amiga. These operations include which files a program is trying to open, which fonts, libraries, devices and environment variables it is looking for, and so on. To run SnoopDos, just double-click on the icon or type RUN SNOOPDOS at the Shell prompt. If you are having problems loading a particular program, just run SnoopDos to see what the program is trying to load and then have a look at SnoopDos' output window which will probably give you a fair indication of what's going wrong. Most of the features are fairly obvious, but if you get stuck, you can press the HELP key to access AmigaGuide help.



SnoopDos keeps an eye on your system so you can see where problems are occurring.

> *Virus Checker has an almost endless list of features and settings, including a separate preferences editor and an AppIcon for instant checking*

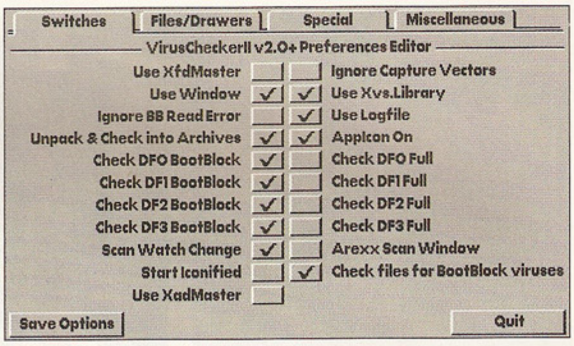
DISKORG

DiskOrg is a little database program that's been designed to catalogue the files in your floppy disk collection. It gives you the ability to sort files by name, disk name, date or size as well as offering pretty powerful search functions. It's neat, compact and should run on most Amigas.

VIRUS CHECKERII

This is a new update to the king of virus killers on the Amiga and can be used on any Amiga running Workbench 2.04 or better. It is designed to hunt out Amiga viruses and stop them dead in their tracks. It can be configured to completely and automatically scan any floppy inserted in any floppy drive, scan memory on startup and check all suspect vectors and it also features an AppIcon so you are able to drag and drop any suspect files or newly downloaded archive onto it for instant checking. *Virus Checker* also checks memory locations every two seconds for infection giving you almost total system protection. Although it is possible to install *Virus Checker* manually, considering it's complexity I wouldn't recommend it. Just stick with the supplied installer script and you can't go wrong.

Although you can try using *Virus Checker* without reading the supplied documentation, I would strongly recommend giving it a good read. *Virus Checker* has an almost endless list of features and settings, including a separate preferences editor and the only way to get the best protection from it is to configure it properly. *Virus Checker* is shareware and you can even register it in the UK, so you have no excuse not to support the ongoing development of this outstanding piece of software.



The Virus Checker preference editor allows you to fine tune almost every feature of this program.

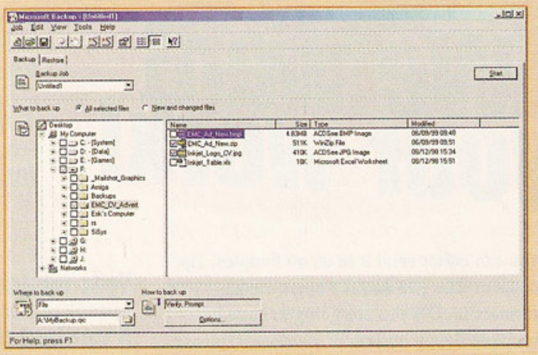
WORLDCUP

Football fans are in for another treat with this coverdisk. On *AF126a*, I included the great *Football*, a set of ARexx scripts and front end and now comes *Worldcup*, an Amigaguide guide to everything related to the World Cup since it's inception in 1930. Pasi Ylinen, the guide's author has done a cracking job and as well as the standard details you would expect to find in such a guide he has included all sorts of additional information and trivia. For instance, did you know that there have been a total of 1,755 goals scored in World Cup matches?

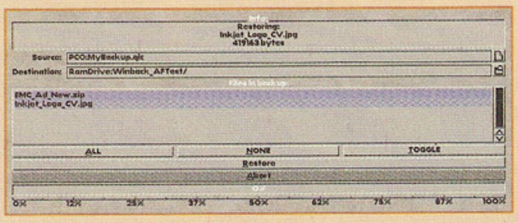
WINBACK

In a nutshell *WinBackIII* restores backup-files created with Microsoft's *Backup* found as standard on both Windows 95 and Windows 98 machines. It features a nice, easy to use MUI interface, that allows you to select the files contained within the backup set and set the location of where you want to restore them to. WinBack is compatible with both DD low density 720K as well as HD 1.44MB formatted PC floppy disks. So, if you need to transfer files from a PC and you don't have the Siamese system, a serial connection, or any other method of transferring files, this could be for you.

Winback obviously requires MUI along with CrossDos installed (it wouldn't be able to read the PC disks without CrossDos). Installation? No problem, just copy *Winback* to your desired location and away you go. Do note though that *Winback* does not support compressed backups created with Windows Backup and will not restore directory tree structures.



Here I have chosen to back up two files on the PC using Microsoft's Backup...



...and here I am restoring them onto the Amiga using the excellent Winback.

Games Disk

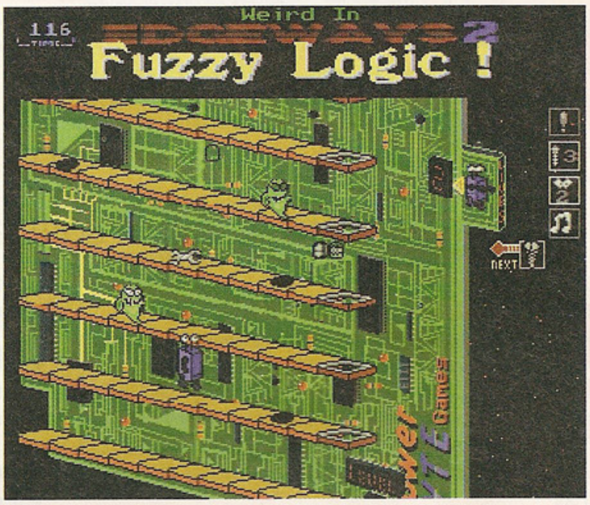


Errol Madoo brings you a great little robot platform game, a *Tron* clone featuring worms, loads of hints and cheats for your Gameboy and a utility to pacify all the WHD freaks

FUZZY LOGIC

This is a platform game where your task is to guide your robot, Fuzzy Logic, up and down the platforms by jumping through the moving holes. He has to clear the system of some nasty bugs and fix the damage they have done by loosening the screws of the circuit board.

In order to tighten the screws you need to pick up spanners (why? shouldn't you need a screwdriver?) and carry them to the loose screws. When you have reached a loose screw Fuzzy will automatically tighten it up. Killing bugs is accomplished by dropping a Bug-Stun Resistor on them from the platform above. If you manage to tighten three screws and kill all the bugs you will transported to the next level. Easy eh?



You've got so many screws loose that it's hard to know where to start but blasting those bad-boy bugs could be a good one.

WORMWARS

WormWars is an arcade game based on *Tron*. It does a pretty good job of combining the gameplay and playability of the basic *Tron* concept with the additional 21 interesting object types, six species of creature, and other enhancements, for a more diverse and strategic gameplay.

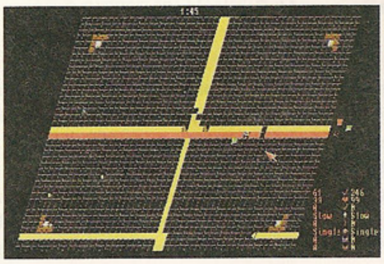
> *WormWars comes complete with a stonking 25 levels and has an editor so you can create your own if the supplied ones are too easy*

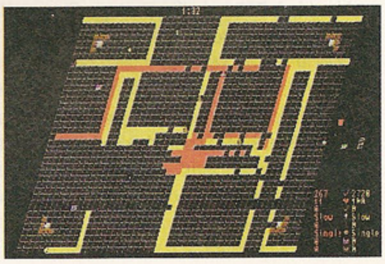
Basically one to four worms travel around a rectangular 53x39 maze leaving a deadly trail behind them. You have to compete and sometimes co-operate with other creatures in order to collect letters and therefore obtain as many points as possible to complete the level before advancing onto the next.

While all this is going on a whole host of different goodies and baddies fly around the screen intent on either helping or stopping you in your tracks. The goodies include "protectors" that follow you round and collect objects that are worth 9 points) for you while the baddies include "killers" that will reduce your health and "fragments" which bounce round the screen and also reduce your health. Don't worry though, there are plenty of things that can help you out as well, "teleports" for instance can move you away from danger. The game comes complete with a stonking 25 levels and has a level editor so you can create your own if the supplied ones are too easy for you.

WormWars has an integral field editor that allows you to load, edit and save user fieldsets for greater lasting attraction. There is support for playing MED and IFF 8SVX files as music and sound effects respectively. Either one, two or three human players can play simultaneously against the Amiga so in a three-player game against the computer two of the players play the keyboard and the remaining player uses the joystick. *Wormwars* should work on any PAL Amiga running OS2.04 or higher. All its files are contained within the *WormWars* directory so installation on your hard disk is just a matter of copying the whole directory across with the exception of the MEDPlayer.library which needs to be copied to your system's Libs: directory. *WormWars* does require some common libraries, such as the exec, dos, gadtools and intuition libraries so you should make sure you have them installed on your system.

Avoid the bouncing killers and grab the protectors in this action-packed Tron clone.





GAMEBOY-FAQ

Created by Marat Fayzullin, this Gameboy text file will prove invaluable for anyone who has a Nintendo Gameboy and sure to contain hints, cheats, passwords and codes for most of the games in your collection. It's so comprehensive that I couldn't find a game in my son's game collection that wasn't covered. As an example there cheat details on *Adventure Island, Adventure Island 2, Amazing Penguin, Amazing Tater, Amida, Atomic Punk* and, *Avenging Spirit* in the "A" section alone.

If you have a Gameboy lying around and have a collection of games that include some that you haven't been able to master, give this guide a look, it may very well refresh your interest in that little box of gaming tricks. The Gameboy FAQ file should be compatible with any Gameboy with at least one game and a functioning power source!

WHDINFO

WHDInfo is used to display information about WHDInfo slaves used in hundreds of HD installers. With this utility, you can quickly view all the slave information including WHDLoad version required, memory, slave version and copyright information. This is very handy to check you have the latest slave, finding the quit key for games, and for WHDLoad HD installer writers to check their installs. WHDInfo should run on all Amigas and be run from the CLI only (you can run from Workbench, but it will only display the help screen and quit).

DISK NOT WORKING?

We take every care to test the coverdisk software, but Future Publishing cannot accept any responsibility for any damage occurring during its use. If your disk is faulty, send it back with 2x26p stamps and an SAE to:
AMIGA FORMAT (insert name of disk) • TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH •MERTHYR TYDFIL • CF48 4YB
If there is a manufacturing error then the stamps will be returned with a replacement disk.



Free! Reader Ads

Buy, sell and exchange your Amiga hardware and software in the best free ads pages around

FOR SALE

Prelude 1200 16-bit full duplex sampler, requires 68030 50MHz and 8MB RAM or better. Few months old, £85. ☎ Mike 0151 4207132 (Halton).

Dynalink V1433 external modem, £30. ☎ Bernie 01273 591122 or email bernascone@fdn.co.uk.

Vidi Amiga 24RT Pro 4MB video digitiser. Works on any Amiga boxed with software, leads, manuals plus Amiga power supply. Must sell, £90 the lot. ☎ 0181 3950688 (Carshalton, Surrey).

19 boxed original games £4 each or £70 for all. 2GB SCSI hard disk £50 ono, 500MB SCSI hard disk £20 ono. Both internal monitor antiglare screens £10 ono. All the above add postage and packing. ☎ 01709 814296.

A1200, 32MB, 68030 in desktop. 20xIDE CD-ROM, colour monitor, games etc, £400 or swap for best shortwave receiver offered. ☎ 01529 413118 after 6pm.

Lightwave 3D (v3.5) original, boxed, manual, dongle, £35 plus £3 p&p. 64MB 72-pin SIMM, 60ns, double-sided, £60 including postage. Cinema 4D (v4) CD-ROM, manual etc, unopened £50 including postage. ☎ 01405 860798.

Videotech VCC3010 RGB corrector and video enhancer. Four switchable video and audio inputs, two video/audio outputs, 500 line resolution boxed £125. Realthings anims: birds, horses, sealife, safari, humans. ☎ 0113 2930758.

A500 1998 update Viper 520CD with 10MB RAM 100MB hard disk, loads of games, includes all manuals and hardly used 1MB chip all for only £100. Includes postage and packing. ☎ Paul 01293 545580.

A1200 with Commodore 1080ST monitor, mouse, joystick. Games including F1 Grand Prix, Deluxe Paint II. Includes system disks, Wordsworth, Transwrite and Wiring. Excellent condition, £300. ☎ 01943 877077.

Aminet set 3 £10, Aminet 10, 12, 13, 15, 21 all £5 each. Onescapee £10, Worms £5, Wendetta £10. ☎ 0116 2770091.

Full set of *Amiga Format* and CU Amiga cover CDs plus floppy disks. All magazines with CDs. Plus AUI mags. Offers? ☎ 01992 711204.

Philips CM8833 MK2 stereo monitor good condition, £50, buyer collects (Bristol). ☎ 0117 9571655 or email phil@edwards98.u-net.com.

Blizzard 1230/50 with FPU and 8MB £50, Canon BJ10ex printer (plus driver) £50, A500 PSU £5, Micronik Scandoubler (internal A1200) £40. ☎ 0973 806641 or email darren@crown.free-online.co.uk.

A1200 Desktop Dynamite set with 4MB accelerator card plus external floppy drive and loads of software, games, wordprocessors etc. ☎ 01522 789093 or email motters@bigfoot.com.

A500, IMB RAM, 720K Fd, high resolution monitor, mouse, joystick, printer, Workbench, Kindwords, Deluxe Paint. Many games including Golf, Desert Strike, Turrican, Shuffle Puck Cafe etc. All in excellent condition, £75. ☎ Mr Harden 01483 720732.

A1200 8MB, Philips 14" colour monitor, instruction books/video and cassettes. Star LC200 colour printer, A500 hand power scanner. Will separate, £200. ☎ 0181 7776712.

Amiga parts from motherboards to SCSI hard disks/internal floppy drives to cases. Call for a full list. ☎ 0589 884869 or ☎ 0181 9793905 evenings.

Cyberstorm Mk III 68060 50MHz with ultra wide SCSI 32MB RAM, 60ns internal SCSI adaptor from ultra wide SCSI to 50-pin header, £320 ono. ☎ 0797 4885032.

Amiga 512K with 512K upgrade including Citizen Swift 24E printer, Amiga organiser shelf, games, joystick, mouse and software, £75 ono. ☎ 01254 889972.

WANTED

2.5" hard disk and CD-ROM with all leads and software. Will pay good price. ☎ Brian 07712 910787.

Microvitec monitor wanted. ☎ Bernie 01273 591122 or email bernascone@fdn.co.uk.

Monkey Island 2 and Goblins 1 and 2 and any other good adventure games for Amiga 1200. Will buy or swap. ☎ 0161 7947135 anytime (Swinton).

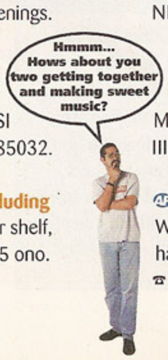
Final Writer, Disk One, Install Disk. I've lost mine! Can anyone help with spare copies? Thanks! Please write to: A. James, 6, Hereford Court, Danes Gate, Headstone Drive, Wealdstowe, Harrow, Middlesex. HA1 4UG.

Amiga Format CDs needed. Numbers 1-4, 8, 9, 19, 21, 23-34. Also does anyone out there have any old CU Amiga CD-ROM disks. Can pay small amount plus p&p. ☎ 07939 495735 anytime.

Amiga music programmers wanted for commercial CD compilation. Music must be wholly produced on the Amiga, have commercial viability and be original. Email zvvld@purplenet.co.uk or contact me on my 24Hr BBS ☎ 01819076414.

Looking for a Squirrel interface, email darren@crown.free-online.co.uk.

Amiga CD-ROM games. Anything considered, will pay up to £15 each. Email your list to d.cross@ukonline.co.uk or send snail mail to D. Cross, 101 Fields Road, Oakfield, Cwmbran, Torfean NP44 3EQ.



Amiga hardware wanted. I will pay any price for CyberSCSI, Fastlane Z3, V-Lab Motion, Delfina Lite, Maestro Pro, DPS-Par, Triple Play Plus, Cyberstorm MK III (060). ☎ Leroy 01903 603364 anytime.

Space Crusade and Data Disks, Space Hulk. Will pay a good price. Thanks to all the people that have responded to my adverts in the past. Cheers. ☎ Martin 0171 495 2657.

Has anyone got a Zorro II-compatible graphics card for under £100? Also needed 68882 PGA FPU and non-volatile PCMCIA memory card. ☎ Anthony 01474 706114.

Protext 5.5 or 6.0 Wordprocessor with manual. Floppy disk only. ☎ 01582 725595 anytime.

Desperately seeking Image Master RT and Montage 24 graphics software. Cash waiting. ☎ John 01603 743827, email john@woodgatey.freeserve.co.uk.

Anybody with an A4000 desktop upgrading to PPC? I need a CPU board, '040 or '060, for my Amiga. I can pay from £50 to £75. Send me an email paularnold@free4all.co.uk or ☎ 01903 739069 after 6pm and ask for Paul.

Bloodnet AGA or CD32, Prey CD32, Beneath a Steel Sky CD32. I'll pay up to £12/30DM per game. Email ancor@datacomm.ch.

I'm looking for Final Writer, higher version than Final Writer Lite. As high as possible, reasonable price please as I am disabled and unable to work. I have an A1200. ☎ 0161 8655537.

PDSoft CDs: Hottest 1, 2, 3, 6, Utilities and Megademos. WS's Multimedia Toolkit 2, AMUC Collection, EMC 3, 4, WOTW 92 CD, BCI Net 1, 2, CDPD 1, 2, 3, 4, Fresh Fish Collection. Originals only, please. Write to Philippe Dumont, rue Lombry 7, 4920 Aywaille, Belgium. Email hibisch@hotmail.com.

PERSONAL

Also see the AmigaAngels document on our CD.

If you are a member of, or know about a user group in Norway which needs a member, please email me, Farald, at wwat@online.no. Thanks.

I am an Amiga artist/musician wanting to do graphics or music for your PD, shareware or games. Highly proficient with Octamed, Soundstudio and Deluxe Paint. Both AGA and standard Amiga formats. ☎ Vivian 001 505 835 2841 (New Mexico).

Amiga contacts wanted to swap games and ideas Contact: Mr G Emery, 3 Scott Ave, St Budeaux, Plymouth, Devon PLS 1HQ.

Any Amiga users new to the Internet who want some free links/gallerys and downloads to get them going can go to my site at: http://www.g251273.freeserve.co.uk or email me (Paul) at: pol@g251273.freeserve.co.uk.

Any Amiga magazines or disk magazines require another contributor? I have knowledge of A1200 and other Amigas. Will work for free. Article previously published in *Amiga Format*. ☎ Ross Whiteford 01738 850732.

Amiga contacts wanted in the Edinburgh area. Write to Gordon Lawrie, 21 Wilson Terrace, Broxburn EH52 6EP.

Looking for email pals in any area. Just got connected to the Internet so looking for contacts. Email Duncan McGregor at: dkm@free4all.co.uk

Do you want Worms DC levels, but don't have a CD-ROM? Simply send a disk and 50p to: Mick Galvin, 84 St Cuthbert's Cres, Albrighton, Nr Wolverhampton WV7 3HW.

Amiga contacts wanted in Portsmouth and Gosport area. ☎ Brian 07712 910787.

BBSes

Alpha Zone BBS, over 10,000 files, online CD-ROMs, 56,000bps and free email. ☎ 01788 551719 after 10pm.

Bobbs, ☎ 01243 371644, online 24 hours. Based in Hampshire, south east, host for Powernet. Loads of files, home of BullRPG, The best Amiga Lord clone. Speeds up to 56K.

Skull Monkey BBS, Lincoln. Online 24 hours. ☎ 01522 887933. Friendly sysop. Email sns@skullmonkey.freeserve.co.uk – keeping the Amiga alive.

Want to chat about anything and everything with people all over the globe? Then join Fluffynet – the fluffiest Fido-style BBS mail network! ☎ Total Eclipse BBS, +44 (0) 870 740 1817 or visit http://www.fluffynet.n3.net for information on how to join. Hubs and nodes available. Anyone welcome!

Alpha Zone BBS, over 10,000 files, online CD-ROMs, 56,000bps and free email. ☎ 01788 551719 after 10pm.

Arachnoids BBS. Leicestershire Online 24hrs. ☎ 01509 551006 Friendly Sysop over 10,000 files online. No ratios everything free. Ninja@Arachnoids.freeserve.co.uk.

Quest BBS, Wakefield. West Yorkshire's largest BBS with over 30,000 files online, including the latest 7 Aminet CD-ROMs. Online weekdays, 6pm-6am and weekends, 2pm-6am. ☎ 01924 250388.

Tribal Mirage BBS, Online 24 hours, Running Xenolink v2.8, Amiga Sysop with over 15 years of Amiga experience. 20,000+ files online. File requester. Amiga support given. Hertfordshire. ☎ 01992 410215, email sysop@tmbbs.freeserve.co.uk.

Total Eclipse BBS, ☎ +44 (0) 1983 522428, 24 hours. 33.6K, home of Liquid Software Design and MAX's Pro support.

The Forum! BBS online 24 hours, Kilmarnock, Scotland. Over 35 members, 2,000+ files available, including games, pictures, utilities, etc. Sysop: Jamie Maguire. Run by a software development student. ☎ 01563 540863. 36K.

Elevate BBS, Hants, online 24 hours. ☎ 01329 319028.

Bedlam BBS, Leicester, online 24 hours. ☎ 01162 787773.

Entertainment BBS, Wigan, online 24 hours. ☎ 01942 221375.

Frost Free BBS, ☎ 01484 327196 (Slaithewaite, W. Yorks).

Bill's BBS, Cumbria, online 24 hours (mail only between 2.30am and 3.30am), ☎ 01229 434393 or 0870 7878615. Sysop: Bill Clark. Visit http://cumbria.cjb.net, email billsbbs@cornerpub.com or bill.clark@ukonline.co.uk. Supports Fidonet. Loads of free files, games, doors, etc. Unlimited downloads.

Zodiac BBS, Hants. Online 11am-7pm 7 days a week. ☎ 01243 373596. Sysop: Destiny Co. Sysop: Axl. Running Maxs Pro v2.11, Hellnet. Lots of files.

On The Oche BBS, Waterlooville, online 24 hours. ☎ 01705 648791.

Moonlight BBS, Bedford, online 6pm-8am, 24 hours at weekends, ☎ 01234 212752. Sysop: John Marchant. Email gnome@enterprise.net Official Transamiga Support BBS, unlimited downloads, friendly sysop with excellent knowledge. Aminet online. Run by an experienced Amiga programmer who will help you out for free.

X Zone BBS, supporting the Amiga for over two years. Do you want the latest files? ☎ 01635 820590, 6pm-1am, modem callers only (33.6K).

USER GROUPS

Amiga North Thames meet on the first Sunday of the month at St Mary Magdalene Vestry, Windmill Hill, Enfield, 1-5pm. Software/hardware problem solving, demos, news and Amiga games. ☎ Mike 0956 867223 weekends or email Ant.london@ukonline.co.uk.

Do you need help with your Amiga? Can you help someone with their Amiga? If so please get in touch. ☎ Terry 01709 814296.

New user group being set up called TAG (Total Amiga Group). Initially in the Somerset area. ☎ Phil 01458 832981.

Are there any Amiga users in Birmingham who want to set up a user group? ☎ Hitesh 0121 6056452.

Need a new IRC chat channel? Come to #PoweredByAmiga on ARCNET for fun and informative chat about Amigas and otherwise. Visit our URl at http://www2.prestel.co.uk/amigav/PBA/. We mostly meet at weekends about midday.

UAUG est. 1986 (non-profit making), 40 page magazine. Free cover disk, 20,000 free PD titles, digitizing, scanning, helplines, support for all Amiga users. Free gift upon joining. Send SAE for details to: The Editor, 13 Rodney Close, Rugby CV22 7HJ.

NPAUG is a new Amiga user group based on the net. We offer a free monthly magazine and tech support over the web. If you are interested in joining, visit our website: http://members.aol.com:/npaug/home.html or email me: npaug@aol.com.

Are you Welsh, live in Wales or love Wales? Then join Cymru Amiga User Group. Visit us on http://bounce.to/caug or email dark.lords@deathsdoor.com to join.

Continued overleaf ➡

South West Amiga Group, (SWAG) meets every 1st Thursday of the month, 8:30pm at the Lamb & Flag (Harvesters), Cribbs Causeway, Bristol. SWAG intends to get Amiga users together, provide info and support, promote the Amiga and have a laugh. Contact Andy Mills: Swag@wharne.u-net.com.

Amiga Support Association. We offer help and advice to Classic Amiga enthusiasts. Monthly meets to be arranged for a Southampton Venue. Please contact Phil for more information: Snood@ukonline.co.uk or ☎ 01703 489701.

Pennine Amiga Club. Free worldwide helpline supporting all models. Non-profit making club. Not a business. We help with free advice: ☎ 01535 211230.

Workbench, the Manchester Amiga user group. We meet on the first Thursday of each month at 7.00pm and offer general Amiga chat. ☎ 0161 839 8970. Also, check out our website at: http://www.workbench.freeserve.co.uk Alternatively, email: mail@workbench.freeserve.co.uk..

West Lancs User Group. Sundays, 1pm-4pm at St. Thomas School Hall, Highgate Rd, Upholland. ☎ 01695 623865, email ralph@twiss.u-net.com. Help and advice, novices and experts welcome.

Deal Amiga Club welcomes all old hands and newcomers alike, whatever your ability. Admission £1, under 16's 50p. Annual membership is now free. Also if you've bought some bits and don't know how to put them together then bring them along and let us help. ☎ 01304 367992 or email superhighwayman@hotmail.com.

Is there anybody in the Northamptonshire area interested in starting up a new user group? Please contact me: ☎ 01536 724309 or email nsthomas@ukonline.co.uk.

Felbrigg Amiga Group meets weekly near Cromer. We are a group for novice and expert users. For more information ☎ 01263 511705 or 824382.

Want the latest reviews, news, interviews, articles? then visit the NEW AIO website at http://www.aio.co.uk, or visit #amos on ircnet, Saturday 9pm-midnight.

Northern Ireland user group welcomes new members. Emerald Amiga Users meets regularly in Strabane. Please contact Charles Barr. ☎ 01504 884700.

Medway and Maidstone Amiga collective. Meets monthly. Advice at all levels. Experts and beginners wanted. ☎ Dave 0961 809466. Support your local user groups!

Join a new email club for Klondike, a Reko Productions game. Cardset creators and cardset collectors, Amiga and PC. Email kevin@reko.karoo.co.uk (make friends).

NAC Nottingham Amiga Club New club starting soon. New/old users welcome! From A500 to A4000. Hints and tips on all software, games and hardware. ☎ Mark 0115 9566485 weekends only!

New Amiga sound and demo association seeks input, contacts and support to form a user group based around the Amiga music and demo scene. Interested? ☎ Dave 01243 864596 or 0961 985925.

Interested in Internet Relay Chat? Why not visit #Amigazone on Dalnet? We are a friendly bunch and meet at 10pm every day. Visit our website at: http://www.tsd-ltd.demon.co.uk.

The Amiga Free Helpline still needs helpers, so if you have a lot of knowledge about the Amiga, or just a little bit, but are willing to help please call. ☎ Terry on 01709 814296.

Lost soul seeking Amiga users in and around Southend and the south east Essex area. Just left school. ☎ Elliott Bird 01702 582621 or write: 1 Thorpe Hall Close, Thorpe Bay, Essex SS1 3SQ.

Power Amiga User Group based in Portsmouth for users of all ages and levels. We meet once a month on the last Saturday. We generally have Amigas of all sorts to look, listen and learn from. We have prize draws, tutorials and general discussions each meeting. ☎ Richard 01705 829541 or email richard@poweramiga.freeserve.co.uk or visit http://www.poweramiga.freeserve.co.uk.

Huddersfield Amiga User Group (HAUG) meet on the first and third Wednesday of every month at The Commercial Inn, Market Street, Paddock, Huddersfield from 7.30pm onwards. The first meeting is free & easy, the second is a demo night where we will show you how to use a particular piece of software. ☎ Geoff (01484) 322101 or Bob (01484) 654291 email geoff@geemil.demon.co.uk or robert@golcar.demon.co.uk or visit http://websites.ntl.com/~paul.4/index.html

Coventry and Warwick Commodore Computer Club (CWCCC) meets once a month on the first Wednesday at Earlsdon Methodist Church, Coventry. For more information email Luke Stowe luke.stowe@ukonline.co.uk or visit http://ukonline.co.uk/luke.stowe/cwccc/index.html

SEAL meets twice monthly at Northlands Park Community Centre, Basildon, Essex. We offer help, tutorials and presentations plus scanning, printing and email. Contact Mick Sutton, 20 Roding Way, Wickford, Essex. ☎ 01268 761429 (6-9pm). Email seal@thunder.u-net.com or visit our website, http://seal.amiga.tm.

Great Yarmouth user group. Anyone interested in joining this user group please contact John ☎ 01493 722422.

ADVERTISE IN AMIGA FORMAT... FOR FREE

The editor reserves the right to refuse or amend ads. We accept no responsibility for typographical errors or losses arising from the use of this service. Trade ads, including PD advertising, will not be accepted. ILLEGIBLE ADS WILL BE FILED IN OUR BIN!

Name: ....

Address: (not for publication) ....

....

Postcode ....

Telephone: ....

Date: ....

Please tick to show required heading:

☐ For Sale ☐ Wanted ☐ Personal

☐ BBSes ☐ User Groups

Return to: Reader Ads • Amiga Format • 30 Monmouth Street • Bath • BA1 2BW. You can email amformat@futurenet.co.uk, **putting 'Reader Ads' in the subject line.**

Unfortunately we cannot guarantee insertion in a particular issue.

I have read and understood the conditions for the inclusion of my ad

Use one space for each word. Only the words in this section will be printed.

Free!

Signature: ....



Huddersfield Amiga User Group



Paul Compton ventures 'oop north' where they have women and everything

Arriving in Huddersfield wasn't a new experience for me as I already knew some of the Amiga group users – they don't mince words, and their support and work for the Amiga is well known. It's a sad fact of life but a lot of people talk about supporting our machine but rarely get past the stage of talking about it; some groups pop up and disappear almost over night through lack of organisation. Not so with this group, this group have been going since 1995 and seem to go from strength to strength. This year at the WoA, HAUG. put on several good demonstrations on how to tower a 1200 and also ran a very helpful advice centre in London.

The Huddersfield Amiga User Group (HAUG) hold their meetings in a back room at a local pub, not some people's idea of a good venue, but I think it is one of the best ways to do it – there's nothing worse than walking into a huge sterile community room, and feeling like a lemon in the corner. This way, if you want you can buy a pint and feel quite relaxed, have a walk round, look at the machines and chat to the members. At this meeting there were some 17 people, and over half had a machine set up. Like most meetings of this type, machines varied from pure vanilla to power setups, just as the members ranged from pure beginners to people who knew the machines inside out. Something else which was good to see was Amiga users of both sexes present. I got talking to someone who told me she used her machine at a college where she taught knitting design. How do people follow those patterns? It looked more like assembler code to me, and I thought using the CLI was difficult.

One other member worthy of mention is Paul Smith, the HAUG webmaster who, unfortunately, is unable to attend regularly due to working shifts. This is a shame as he is one of the few members capable of and able to give demos – *Cinema4D* and *Turbocalc* are his forte as well as the creation of the club's website using nothing but a text editor. Most of the other demos are given by Dave Naylor and Geoff Milnes and cover various topics including graphics, animation, sound sampling and manipulation, ARexx coding, Internet, comms, AmigaDOS (coming up shortly) and the next meeting will cover *Opus 5*, an essential bit of software.

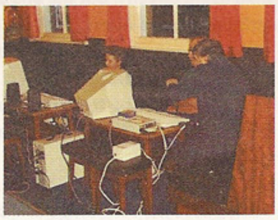
HAUG also have arrangements in hand for Steven Thornber (*Cinema4D*) and Derek Brookhouse (Classic Amiga PD) to come along and talk to them later this year.

The group was set up in 1995 by Geoff Milnes and Bob Crawshaw to enable fellow Amiga users in and around the Huddersfield area to get to grips with the more serious side of our beloved machine. "Amigans," Geoff told me, "are a diverse set of humans with many interests which range from 3D design, through to music and the ability to knit on the Amiga! Our members vary in all ages from school age to the retired. No matter the subject, we most likely have a member who can help. We also have a handbook that was designed by some of our members. It comes in its own ringbinder and looks quite professional. It contains all you need to know about our merry band of Amigans and covers member details and print-outs of demos that we have done, so if you forget on the night you can take it home and go through it at your own pace."

This little book was actually very good – I didn't get offered one though. However, I shouldn't complain as I was treated to a KFC half-way through the meeting. When I did manage to get a look through the binder I read up on the ARexx demo given by Dave Naylor just recently. It was full of a lot of useful information, and with everything written down it makes it that much easier to give it a go later.

So if you live in the area, pay HAUG a visit, it is very easy to get to, and well worth the effort to get there.

If you want you can buy a pint and feel quite relaxed, have a walk round, look at the machines that have been set up and even talk to a woman



Craig Sears – the youngest member, Kevin Gallagher (Club Treasurer – partially hidden), Laurie Sears.



John Halstead, prospective new member named Nigel, Geoff Milnes (Club Chairman).



Paul Wood (back to camera – fortunately!), Dave Naylor (FrostFree BBS) and Jeff Gill (my mate).



Craig Denton (travels by train from Leeds just to attend), Paul Smythe (travels from Halifax), Craig Sears, Kevin Gallagher (Club Treasurer), Laurie Sears, Malcolm Walker (Club Membership Secretary).

HOW TO GET THERE

Meetings are held at the Commercial Inn, Church Street, Paddock, Huddersfield.

Directions are from the centre of Huddersfield:

Take the A62 (Oldham) out of Huddersfield, past Wickes (on your left) and take the right-hand lane to the set of traffic lights. Turn right here and proceed past the DIY store (on your right) and swing right under the viaduct. Carry on past the scrap yard (on your left) and slow down for the big speed humps in the road. Go straight up and the Commercial can be found on your left. There is a small car park behind the pub, and you can gain entry from the rear up the fire escape (if the doors are open, obviously) or through the front. You will find us in the back room.

LIST OF MEETINGS:

The first Wednesday of the month is a casual meeting:

- **Wednesday November 3rd** ■ **Wednesday December 1st**

On the dates below demonstrations are held:

- **Wednesday October 20th** ■ **Wednesday November 17th**
- **Wednesday December 15th** ■ **Wednesday January 19th**



Neil Bothwick
Wirenet Supremo

Just the FAQs

We put the screws on Neil Bothwick this issue and get him to answer our probing questions

When did you first use an Amiga?

1987. It was an A500 with Kickstart 1.2, although the Workbench 1.3 kit came out shortly after. It was soon upgraded to the dizzy heights of an extra floppy drive and 1MB of RAM.

When did you decide to get involved in the Amiga market on a business level?

I started thinking about it towards the end of 1995, sorted things out in the early months of 1996 and launched Wirenet in May of that year.

How did you get the idea for Wirenet?

At that time there was no easy way to get an Amiga on the Internet. No *Miami*, no *NetConnect* and no ISPs able to provide help. The initial idea was to put together a software pack, somewhat like *NetConnect* later turned out to be, to help people get online. After discussions with several ISPs it became clear that a software suite wasn't enough, no matter how complete or intuitive it was. People need someone to turn to when things don't work as expected, especially in the first few weeks or months. Once that became clear, Wirenet was the logical next step.

What are you working on now?

With the advent of the "free" ISPs providing a bare bones service financed from their cut of the phone costs, we have had to look more and more towards emphasising the "quality service" side of Wirenet. We have recently introduced a domain hosting service, at very competitive prices, allowing people to make better use of their email and web space.

The main new feature though is 0800 access. From November, our customers will be able to access the Internet via a free 0800 number on Saturdays and Sundays. For all but the lightest user, the savings on phone costs will more than offset our subscription. Even allowing for BT's Friends & Family/Best Friend discounts, you only need to spend just over two hours online each Saturday and Sunday to save more than the annual subscription. And that doesn't take into account the time you dial in briefly and still get hit for a minimum charge.

What's the one Amiga peripheral (software or hardware) that you wouldn't be without?

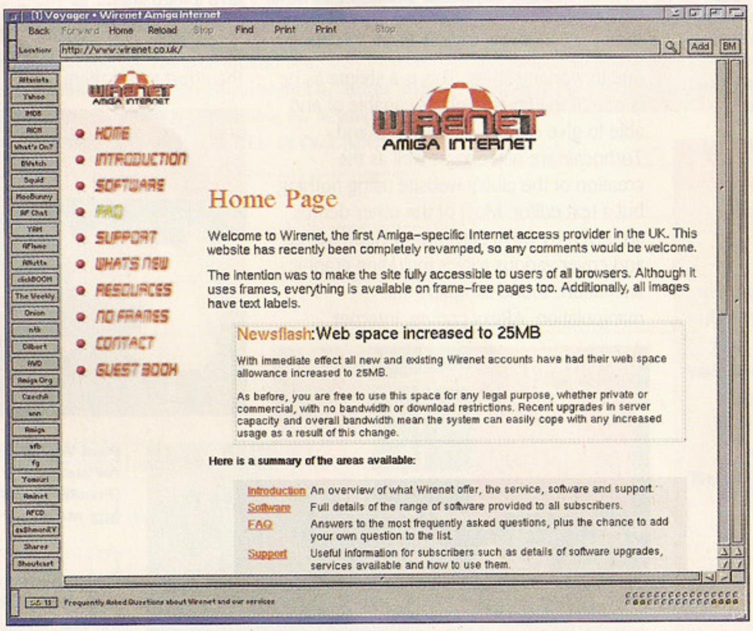
You're probably expecting me to say *Opus Magellan*, or maybe *THOR*. Those two, and *GoldED*, are the ones that I spend the most time using directly. But the one piece of software that I consider indispensable is ARexx. Taking a computer programming module when I was at university taught me two things: programming is fun, and I'm not much good at it. ARexx allows me to enjoy the first without having to worry about the second. It also means I can make my Amiga do just about anything I want it to.

Who is your Amiga hero and why?

I don't have heroes, Amiga or otherwise. However, I have the utmost respect for anyone still working in the Amiga business. I know how hard it is to make a living from the Amiga, anyone who continues to do so does it from enthusiasm and commitment, not through any profit motive. I won't name anyone, because that would mean leaving someone else out.

What's the one piece of software or hardware you wish you'd had the idea for?

Miami. It wasn't successful because it's a good TCP stack. It succeeded because it was a good idea. Even if the TCP implementation had been poor, *Miami* would still have done well, because it revolutionised getting an Amiga connected to the Internet. It didn't rule out the need for someone like Wirenet, there's a lot more to the Internet than dialling in and connecting, but it did make life so much easier for so many people.



Wirenet gets you connected to the Internet and offers support and information too.

afb amiga format bulletin

One of our long-standing members, Gerald "Bauglir" Mellor, describes just how afb can work

First off, for those of you who don't know what a mailing list is, it's a way of distributing email to a group of people with similar interests. Once you have joined such a list you can send email to a single email address, this will then be sent to everyone else on the list. The afb is not, as the name implies, a bulletin about your favourite magazine, rather it's a mailing list dedicated to Amiga-related discussion. I've been a member of the afb since its inception, and have seen it rocket in size from a few members to almost 800 at the time of writing, recently we reached 30000 messages sent altogether (not all in one day, although sometimes you'd be forgiven for thinking so).

If you join afb you can expect to read and take part in discussions on a wide range of topics, from the various merits of *iBrowse 2.1*, to the joys of eating haggis, to opinions on the latest happenings at Amiga, to the correct usage of apostrophes. As you can see it's not strictly Amiga related, which makes for a more diverse and interesting read, although if anyone strays too far off topic they will be warned by one of the list moderators. You will also have the opportunity to make use of eGroups' fantastic Polls service, the perfect way to find out just what your average Amiga user thinks, and have the results published on this very page.

However, the afb is not for the weak-hearted. It's not unusual to have to download 150 emails in a single day, and while this may be manageable for some people, others will find it hell on earth having to wade through all the messages to find something they're interested in reading.

The list is full of educated (and uneducated) people of all age and experience ranges, so you can feel pretty confident that any question you ask will be answered accurately. It's always great to see something you've commented on being responded to personally by someone like Ben Vost, Neil Bothwick or Richard Drummond. Also, because the *AF* writers are on the list, it's a great place to be if you want to see stuff changed in the magazine (take the recent changes in layout as a case in point). You will also find people from Power Computing, HiSOFT and Blittersoft on the afb, so if you have a gripe against any of these companies, it's the ideal place to voice your opinion.

> *afb is a great place to be if you want to keep up with the latest Amiga events, or if you want to chat to users from all around the world*

All in all I would say that the afb is a great place to be if you want to keep up with all the latest Amiga events, or if you just want to keep in touch with intelligent Amiga users from all around the world. If you're not already on the Internet it's a perfect reason to shell out money on that modem and a copy of *NetConnect 3*. You'll soon wonder where all the hours in your day went to.

GETTING ON AFB:

You can subscribe to the afb by going to the following website and signing up:
http://www.egroups.com/group/afb/

If you just want news on when the next issue of *Amiga Format* will be out, we offer that at:
http://www.egroups.com/group/afb-announce/

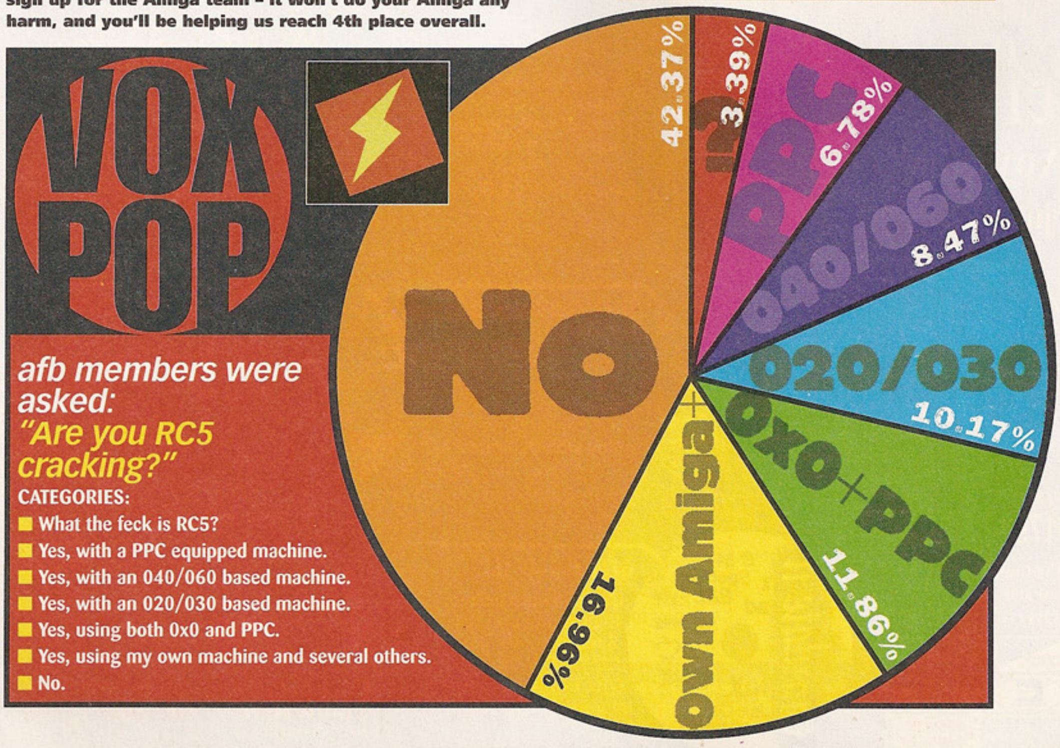
It's worth joining both lists since they each offer unique things and the announce list usually only has one email every four weeks.

RULES AND REGS:

Based on the fact that people complain about a lack of regulation on the list, we've decided to introduce some hard and fast rules. Expect these to change as time goes by, although some will stay fixed:

- **All polls must have dates. For an example of this, look at existing polls before starting one of your own. Also, unless absolutely necessary, choose a closed or anonymous poll – the named one takes up far too much space.**
- **Make sure you quote sensibly, don't include the greeting or signature from the previous mail, etc.**
- **Pay attention to and keep all mails with MANAGE at the start of the subject line.**
- **Keep the subject live. Make sure that it applies to the mail you are sending, or change it to something more appropriate.**
- **There are no content restrictions on afb, although swearing is frowned upon, but please don't include attachments unless previously agreed.**
- **Any URLs posted should have the "http://" part to enable people to simply double click on them to launch their browsers.**

For those few that don't know, RC5 is the greatest distributed computing effort ever. Go to http://distributed.amiga.org/ and sign up for the Amiga team – it won't do your Amiga any harm, and you'll be helping us reach 4th place overall.



FREE INTERNET FOR LIFE

Abel Gratis
Support: Every day 09.00-23.00

100% UK Local Call Coverage
Software on the cover CD
Free software for Windows, Mac and Amiga Platforms

Sign up by going to:
http://www.abelgratis.co.uk

Tel: 0906 680 4444 Fax: 0906 557 4444
Email: sales@abelgratis.co.uk

SELECT SOFTWARE

30,000+ titles & latest aminet 55p per disk (branded 60p)
ansaphone: 01709 530569

Pick 2 disks FREE for every 10
FREE catdisks FREE post & pack FREE disk boxes

Virus-Free - Easy to Use Disks

BOXED GAMES • BUY 2 PICK 1 FREE • BUY 6 PICK 4 FREE • P&P £1 each
(lowest priced choices are free, P&P still payable)

Theme Park ECS/AGA/CD packs £4.99
Sim City 96% a must (any) £2.30
Pinball Illusions AGA £2.30
Slam Tilt Pinball AGA £2.90
Testament 92% Doom (A1200) £2.80
Death Mask Doom Clone (any) £1.90
Gloom Doom Clone 90% (A1200) £1.80
Gloom Deluxe 90% (020, 2 Meg) £2.60
Gulp (Like Lemmings) (any) £1.90
Marvin's Marv. Adventure (AGA) £1.90
J/ Pond 2 Robocod 93% (any) £1.90
Ruffian Platform (any) £1.90
Fantastic Dizzy Platform (any) £1.90
Snapperazzi Platform (any) £1.90
Rise of Robots ECS/AGA packs £2.90
Zeewolf 3D War Strategy (any) £1.80
Zeewolf 2 extended (any) £2.30 + P&P
Skeleton Krew AGA like A. Breed £1.90
Banshee AGA Shoot 'Em Up £2.30
RoadKill (Deadly Racing) A1200 £2.30
Classic Arcadia Nostalgia (any) £1.90
Heimdall 2 AGA RPG Game £2.90
Sci-Fi Collection mixed (any) £2.60
Base Jumpers multi-genre (any) £1.90
Minskies Advanced Tetris (2 Meg) £2.70
Deluxe Strip Poker (18+) (any) £2.20
International Golf (any) £1.90
Cosmic Spacehead varied (any) £1.90

Mad Half Price Summer Sale with *FUTURE PD*
2.5" Hard Drives: 2.1Gig - £79 540Mb - £39
Prices include cables, workbench & £100+ software installed FREE. P&P - add £5

A1200/A4000
- X-Fighter AGA Street Fighter (3)
- Alien Formula 1 Racing AGA (1)
- Deluxe Pacman AGA Full Version!
- Rocketz 2.28 AGA
- Ampu Worms Clone (2)
- Ariel Racers Skidmarks (2)
- RD's Datatypes
- Iconian 2.98u AGA *Full 90% version*
- Deluxe Galaga AGA - Full version (2)

WB2+ UTILS
- Reorg3.11 & Disksalv 2
- Virus Checker II v2 or latest
- Powderdate Pro HD doubler
- MCP Latest (2) 93%
- Toolsdaemon 2.1a

MUI UTILS (WB2+)
- Tool Manager 3.1 Kit (2)
- MUI 3.8 and DevKit (2)
- RO Filemanager 1.29 84%
- Start Menu 2
- RD's MUI Utils 34
- MUI Video Titler 2.1

WB2 + GAMES
- Deluxe Pacman ECS Full Version
- Poing v6.02 (1)
- MegaTyphoon 91%
- Psycheual 98%
- Deluxe Galaga ECS - Full version!

UTILS ETC - ANY IMB
- TextEngine 5 Word Pro
- Snoopdos 3
- Wordworth Fonts (5)
- Star Printer Drivers
- Pro Printer Drivers

ART, MUSIC - ANY IMB
- Bars & Pipes Pro (1)
- Disney Colour Clipart (2)
- RD's Instrument Samples (2)
- Star Trek Rave Demo
- Personal Paint 6.4 *Full* (WB2+) (2)
- Octamed SoundStudio *Full* (WB2+) (2)

GAMES - ANY IMB
- Star Trek 6 Games Pack - £5!
- Lemmings Arcade Game (1)
- Sovereign Slots Fruit Machine (1)
- Super Foul Egg (Puyo)
- M&S Tetris Compilation
- Megaball v4 (3)
- Breed 96 SimCity 1.3
- Real Chinese Mahjong
- Coarse Fishing (2) 100%
- Antwars 1.9
- Chaneques (2)
- M.A.S.H.

EDUCATIONAL - ANY IMB
- Star Trek Guide (WB2+, hard drive)
- Barney Goes Camping (2)
- New WB3 Beginner Guide
- Beginners Amigados (WB2+)

ICONS & BACKGROUNDS
- Magic WB 2.1 p (2) (WB2+)
- Newicons 4.1 (2) (WB2+) 90%
- Newicons Backdrops
- Magic WB Extras 12 (2)
- Magic WB Backgrounds (2)
- Star Trek Workbench Set - £4!
- Iconographics v3 (3)

• AMINET from 25p • 10 DISK THEMED PACKS £5 • CHEQUES PAYABLE TO: M.WOOD,
SELECT SOFTWARE, DEPT AFS, 12 RANWORTH ROAD, BRAMLEY, ROTHERHAM, S66 2SN

Gold Crest PD

- Now better service and quality
- Games, Misc & Education, Games cheats
- Utilities, Business, Art programmes
- Animation, Clip Art, Slide Show, RPG, Tetris
- Adventure Games, Disk Mags, Demos
- Photos Transferred to Disk, Tools
- Literature, Books to Read, Music
- Music Util., Kids Progs, Klondike
- Custom made catalogues

Plus the cards and much, much more...80p Per Disk
For a catalogue send an SAE and 3 floppy disks to:
28 Hepburn Gardens, Felling, Gateshead, Tyne & Wear, NE10 0AD
or Telephone: 0191 438 2939



Call anytime, day or night - Calls cost £1 per min.

Amiga Bureau
Just One Number!
HOTLINE **0906 553 1900**

Amiga Help Desk
Help & Advice on Anything Amiga

News & Information
All the latest Amiga News

Release Schedule
Week by week schedule

Fax Back Service
Catalogues, Lists, Buyer's Guide

Catalogue Requests
Request catalogues for most advertisers in this mag.
One phone call can get you most companies catalogues.

Calls cost £1 per minute
A £2 Software Voucher is sent with all catalogue requests.

PO Box 637 Swindon

SECOND HAND AMIGA CENTRE

MOBILE: 0797 191 0405
andy@shac15.freeserve.co.uk

A1200's FROM £79.99,
MONITORS FROM £71.00
EXTERNAL DISK DRIVES,
MEMORY EXPANSIONS,
PRINTERS, SCANNERS, ETC.
INCLUDES FREE MAINLAND DELIVERY

SEND S.A.E. FOR LATEST HARDWARE & SOFTWARE LIST TO:
SHAC, DEPT AF,
76 HILLRISE AVENUE, BINSTEAD, RYDE, ISLE OF WIGHT PO33 3UL

HARDWARE ITEMS AND A1200 SETUPS PURCHASED
MAIL ORDER ONLY
Please make all cheques payable to A.I. Brown

CLASSIC AMIGA

11 Deansgate, Radcliffe, Manchester

PD Disks, Games, CD's, CD32, Hard Drives, Accelerators, CD Drives and more.

Phone for a free catalogue disk
0161 723 1638
www.classic22.freeserve.co.uk

PleXus Media

The New Choice for Great Value Amiga CD's

Only £10 each
Any 3 for just £20

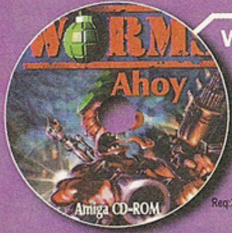
All the Info
It's easy to order...
Send your order with payment to:
PLEXUS MEDIA
PO BOX 583,
SWINDON,
SN2 2YB, UK

Call with your credit card details.
01793 33 02 33

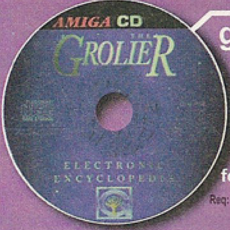
Postage in the UK: Just add a total of £2.95
Overseas P&P: £7



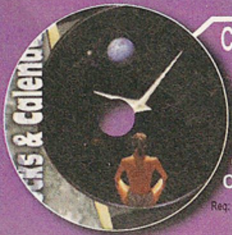
girls,girls,girls
A strictly adult's only CD featuring over 3000 high quality photographic images. Complete with easy to use viewer. *Over 18's Only.*
Req: AGA, 2mb ram + HD & CD-ROM



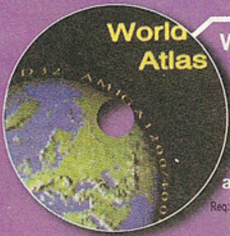
worms ahoy!
1000 extra levels, 100's of new sample sets & add-on's for Worms & Worms: The Director's Cut.
Req:2mb ram + HD & CD-ROM + Worms/Worms DC



grolier
The original interactive multimedia encyclopedia for the Amiga. Get it while you can! Suitable for all ages.
Req: AGA, 2mb ram + CD-ROM

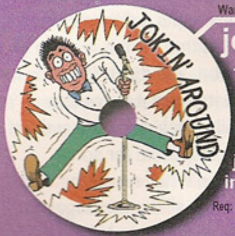


Clocks & Calendars
A truly unique CD featuring a multitude of time related software. Workbench desktop clocks, Calendars and a Diary.
Req: 2mb ram + HD & CD-ROM

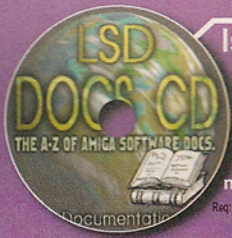


world atlas
A multimedia Atlas for the Amiga. Features hires maps of every country with full statistics and information.
Req: AGA, 2mb ram + HD & CD-ROM

Warning! Contains some adult material



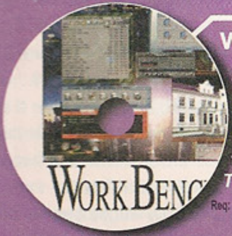
jokin' around
The most original CD in a long while. Features 3,000 hilarious (well most of 'em) jokes all categorised into over 20 subjects.
Req: 2mb ram + HD & CD-ROM



lsd docs cd
Includes over 3,000 documentation files for thousands of commercial games and applications, many with diagrams.
Req: 2mb ram + HD & CD-ROM



the ultimate!
Includes SIX CD titles... Street Racer, Ultimate Gloom 3, Ult. Theme Park, Skidmarks+, Cannon Fodder, Plus a bonus "mystery cd".
Req: AGA, 2mb ram + HD & CD-ROM



wb add-on's
A professional collection of Workbench 3 patches, tools, commodities and add-on's. *The true WB Enhancer*
Req: AGA, 4mb ram + HD & CD-ROM



emulate it!
Use software from the Commodore 64, Spectrum, Amstrad, QL, BBC Micro, +4, C16, PC, Atari & Mac on your Amiga setup.
Req: AGA, 4mb ram + HD & CD-ROM



card classics
Contains Solitaire, Rummy, Poker, Craps, Blackjack, Bridge, Cribbage, Klondike, Pontoon and more.
Req: 2mb ram + HD & CD-ROM



amiga arcade
Includes full versions of Space Invaders, Galaxians, Breakout & Pacman, as well and many other classic games.
Req: 2mb ram + HD & CD-ROM

All titles are held in stock at all times. Mail Order only. We Guarantee that all titles advertised here are available from stock at all times. E&OE

AF 130 – DEC 1999

Editor: Ben Vost
Production Editor: Clare Hatfield
Art Editor: Colin Nightingale
Staff Writer: Richard Drummond
Contributors: Simon Goodwin, Dave Cusick, Tony Horgan, Errol Madoo, Nick Veitch, Paul Cavanagh, Paul Compton, Neil Bothwick
CD Compilers: EMComputergraphic 01255 431389
Assistant Publisher: Paul Pettengale
Group Publisher: Jon Bickley

Overseas Licensing enquiries: Chris Power
Fax: +44 (0) 1225 446019, chris.power@futurenet.co.uk
Group ad manager: Simon Moss
Ad Manager: Simon Williams
Senior Sales Executive: Adam Portingale
Marketing: Georgina Sanders
Production Manager: Charlotte Brock
Production Co-ordinator: Emily Moss
Print Services: Rebecca Stables
Ad Design Supervisor: Sarah Orchard
Ad Designer: Sheu-Kuie Ho
Group Production Assistant: Lorraine Ford
Colour Scanning & Imagesetting: Jon Moore, Mark Gover, Matthew Rogers, Jason Hudson
Circulation: Jason Comber (Intl.), Regina Erak(UK).
Colour Originators: Phoenix Repro
Printed in the UK by GSM and Southern Print.

AMIGA FORMAT – CONTACTS
30 Monmouth St, Bath, Somerset BA1 2BW
Telephone 01225 442244
Subscriptions (see p.42) 01458 271102
Customer Services 01225 822510
Website: http://www.amigaformat.co.uk
Email: amformat@futurenet.co.uk
(INCLUDE DEPARTMENT IN SUBJECT TEXT OR YOUR MAIL WILL NOT BE READ)

If you have a feature idea, a review, a reader request or you want to be in the Amiga Angels list, send an email to ben.vost@futurenet.co.uk, with "Features", "Reader Review", "Reader Request" or "Amiga Angels" in the subject line accordingly. If you don't have email, a letter to the *AF* address with the same subject headings is also fine.

If you want to speak to us about a technical problem, we have a reader call day on Tuesdays. Call us on (01225) 442244 (10am–1pm, 2pm–5pm only please).

AF'S REVIEW POLICY

...is very simple. ***Amiga Format*** is written by the most experienced Amiga users in the world and what we say goes. OK?

WHAT OUR REVIEW SCORES MEAN

90+%	These products are absolutely top notch. They are hard to find any fault with and that's the reason they get an ***AF Gold*** award.
80-89%	These are excellent products that could be improved ever so slightly. They are well worth your cash.
70-79%	A very good product with a few flaws. Items that get a score in this range are still good, but need work.
60-69%	Above average products which need improvement to get a better score.
50-59%	Average products get average scores.
40-49%	Below average and needs a fair bit of work to make it worthwhile.
30-39%	Needs a lot of work for a good score.
20-29%	Something fatally wrong.
Under 20%	The absolute pits.

ABC **Member of the Audit Bureau of Circulations. Registered Circulation** **13,264** January–June 1999

Next Issue

Take your Amiga in hand with our round-up of Amiga-compatible PDAs!



PLUS:

Reviews of:
NetConnect 3, ***PFS3,*** *PowerFlyer A4000,* ***Virtual Grand Prix,*** *A1200 Ethernet adaptor,* ***our usual Christmas festivities*** *and much much more…*

Christmas issue on sale 16th November 1999

RESERVE OR DELIVER YOUR COPY TODAY!

Tell your local newsagent to reserve or deliver AMIGA FORMAT on a regular basis.

MAGAZINE MONTH

TROUBLE LOCATING AMIGA FORMAT?

It is possible to reserve a copy of *Amiga Format* at almost all newsagents, including branches of John Menzies or WHSmith. Simply fill in the form here and hand it to your newsagent – it's easy and there's no obligation. If you still have trouble, phone 01225 442244 and ask for the Circulation Dept, who should be able to inform you of a stockist in your area.

Please reserve me a copy of AMIGA FORMAT every month

Name: ....

Address: ....

....

....

The contents of future issues may be subject to change – no guarantee is implied or intended.

new product

new amiga OS3.5 upgrade

Power Computing is the Official Distributor of the new OS3.5. We are able to offer a special discount for 3.1 ROM chips when purchased with OS3.5. Below are some of the features of Amiga OS3.5. Available in August. WARNING - You must have OS 3.1 ROMs and software to be able to upgrade to OS 3.5

available august £34.95



easy internet access
CP/IP Stack, www Browser with offline/online support, ew cross-application email library, new email client.

support for hard disks - 4GB
NSDPatch (new standard for 64-bit devices. Updated nfo, format, diskcopy and fastfile system). New Hard Drive Toolbox.

new graphical user interface
New icon set (glow icons), new icon library, new esource library, new GUI editor for developers, updated nd enhanced workbench.

extensive cd-rom support
CacheCDFS, new playcd, new CDFS prefs.

powerpc support
New Warpup PowerPC support, new preferences.

html documentation
New comprehensive instructions.

full printer support
New printer device, new printer preferences.

OS3.5 PRE-ORDER FORM

Please send me an OS3.5 upgrade @ £34.95

Please tick model of computer owned - A500 A600 A2000 A1200 A3000 A4000

NAME.................................... ADDRESS....................................

....

.... POSTCODE.............. TEL No.........................

CARDHOLDERS NAME........................ CARD TYPE (EG. VISA) ....

CREDIT CARD No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ ISSUE No..........

SIGNATURE .... EXPIRY..............................

SPECIAL OFFER 3.1 ROM chips at a special price only when purchased with the new Amiga OS3.5.

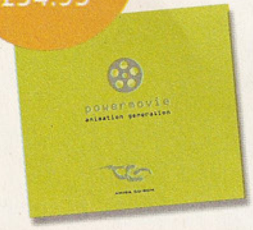
A500/600/2000 ROM chips @ £14.95 ☐ A1200/3000/4000 ROM chips @ £19.95 ☐

TOTAL £........... Please add £5 delivery. Make cheques payable to Power Computing Ltd

new product £34.95

new powermovie software

Power Computing is proud to annouce the final release of its long awaited PowerMovie. After its successful review in the May issue of Amiga Format, PowerMovie, the animation editing tool, playmovie and the animation player tool, have undergone a few more changes and extra testing. Below is a list of the key features:





- Full compatibility with all AGA Amigas
- Edit 320 x 200, 256 colours or HAM-8 frames based animations
- Real time playback, including synchronised soundtrack and sound effects
- Frames can be any size and have different palettes (they will be resized and remapped according to the chosen format)
- Frames can all be played at the same (full) speed, or groups of frames/single frames can be played with a specified delay
- 17 frames per second should be possible on an Amiga with a 50MHz 68030 and 8MB of RAM. 25fps (and more) on a 68040/68060 equipped machine.
- Independent player to record on a VCR, show or view the animation
- A stereo soundtrack can be encoded with the animation
- Separate sound effects can be sychronised to specific frames
- Minimum requirement for decent playback speed is a 6x CD-ROM, 8MB of RAM and 68020 equipped machine

PowerMovie CD-ROM **£34.95 plus p&p** Business Licence **£TBA**



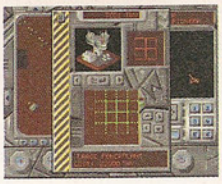
turbo print 7

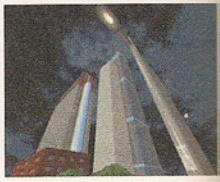
Turbo Print 7	£38.95
Upgrade from 5 & 6 to TurboPrint 7	£18.95

epson printers & consumables

Epson 440 - colour inkjet	£99.95
Epson 640 - colour inkjet	£119.95
Epson 740 - colour inkjet	£189.95
Epson Stylus Photo 700	£179.95
Epson Black ink cartridge	£15.00
Epson Black ink cartridge for Photo 700	£10.00
Epson Colour ink cartridge 440/640/740	£17.00
Epson Colour ink cartridge for 700	£15.00
Epson ink cartridges for other Epsons	£CALL
Epson A4 Photo Quality inkjet paper (100)	£10.00
Epson A4 Photo Quality Glossy film (20)	£10.00

NEW RED MARS CD-ROM GAME





new red mars game
- Thousands of combinations to make hundreds of units
- Tactical battles
- Exploring, mining and building
- Up to three players can take part
- Missions and freeform games
- Playable on any Amiga with CD-ROM
- Graphics card support

Red Mars CD-ROM	£19.95
Breathless 3D game (new low price)	£9.95
Big Red Adventure CD	£9.95
Directory Opus Magellan II	£49.95

scan doubler and flicker fixer
The NEW internal ScanMagic from Power plugs onto the LISA chip and the ALICE chip with a 15-pin connection to a monitor. This leaves the 23-pin monitor port free for use with a genlock device £49.95

ScanMagic Internal with Flicker Fixer	£79.95
ScanMagic External	£49.95
ScanMagic External with Flicker Fixer	£79.95

monitors - 3yr on-site warranty

15"SVGA monitor for graphic cards or ScanMagic	£125.95
17"SVGA monitor (.26 pitch) for graphic cards or ScanMagic	£245.95
17" monitor (.28 pitch)	£199.95

scanquix 4

Award winning scanning software	£49.95

digital cameras

VDC-100, 250,000 pixel CCD	£99.95
VDC-200, 470,000 pixel CCD built-in flash, memory slot	£199.95
4MB Flash RAM for VDC-200	£49.95
40 Alkaline batteries	£24.95

flatbed scanners

Epson GT7000 scanner (requires SCSI interface)	£199.95
Mustek SP6000 Scanner	£79.95
Image FX scanner driver software	£149.95

new low power modem bundles

Economy bundle 1* 56.6 Kbps Fax/voice including iBrowser web browser, Net & Web	£69.95
Economy bundle 2* as above plus Power Port Junior fast serial interface	£89.95

*All modems are internet ready and include 30 days FREE subscription with Demon Internet.

NEW 56.6 Kbps Fax/Voice modem only	£59.95

gvp products

A1200 SCSI Interface for GVP A1230acc.	£49.95
HC4008 SCSI controller and RAM expansion (up to 8MB) for the A2000/A4000	£99.95
GURU ROM	£49.95

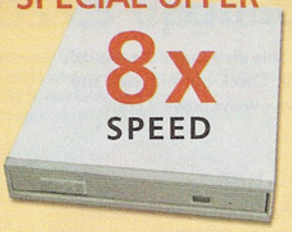
amiga 3.1 operating system
*Disk set & 4 manuals - Workbench, DOS, AREXX & HD

Amiga 3.1 OS for A1200/3000/4000 ROM chips, disks and manuals*	£39.95
Amiga 3.1 OS for A500/600/2000 ROM chips, disks and manuals*	£35.95
Amiga 3.1 OS disk set and manuals* (no ROMs)	£19.95
Amiga 3.1 OS A1200/3000/4000 chips only	£25.95
Amiga 3.1 OS A500/600/2000 chips only	£19.95
Amiga 3.1 OS disk set only	£9.95

All ROMs come with full fitting instructions



SPECIAL OFFER - ONLY £69.95



The new UltraSlim ATAPI CD-ROM drive, complete with 4 way buffered interface and EIDE '99, Allegro CDFS, PSU, Audio In /Out and cables.

amazing hard drive deals



Plug and play hard drive. Includes cable and is already partitioned. All HD's come with a 2yr warranty*

cd-rom, cd-recordable & rewritable

EIDE cd-rom drives

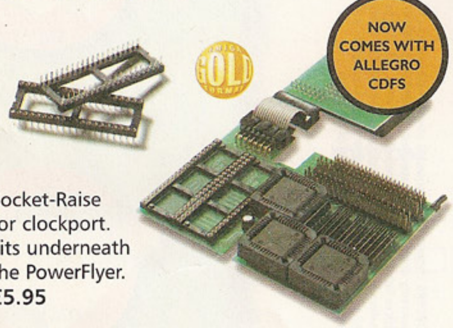
6x Internal ATAPI CD-ROM (bare unit)	£29.95
6x External ATAPI CD-ROM	£65.95
36x Internal ATAPI CD-ROM (bare unit)	£45.95
36x External ATAPI CD-ROM	£79.95
40x Internal ATAPI CD-ROM (bare unit)	£54.95
40x External ATAPI CD-ROM	£89.95

External drives include Buffered Interface, EIDE '99 software, cables and 2 CD titles)

SCSI cd-rom drives

32x Internal SCSI CD-ROM (bare)	£89.95
32x External SCSI CD-ROM	£149.95

External includes cables, Squirrel SCSI interface with software and 2 CD titles)



Socket-Raise for clockport. Fits underneath the PowerFlyer. £5.95

A1200 powerflyer gold edition

Power-Flyer, 4-way enhanced IDE/ATAPI controller, Supports the latest PIO-3 and PIO-4 faster modes, Autoboot from Zip and LS-120, UDMA - 11MB/sec CDFS software, PowerFlyer Gold Edition £54.95

NEW A4000 POWER FLYER GOLD EDITION

new a4000 powerflyer gold edition

- Enhanced IDE/ATAPI controller for ZORRO III bus Amigas
- The first Amiga 3000/4000 E-IDE/ATAPI controller supporting PIO-3 and PIO-4 modes (for up to 16.6MB/sec) and faster UltraUDMA modes
- The transfer is several times faster than any currently available ZORRO II IDE/ATAPI controller
- Fully autoconfig ZORRO III card
- Autoboot from any removable media (ZIP, LS120)
- FastATA'99 - Highly sophisticated supporting software
- Includes Allegro CDFS - the fastest Amiga CD file system, supports video DVD format

On the A4000 two devices canbe attached to a standard IDE controller, and another four to the A4000 Power Flyer. More than one A4000 Power Flyer can be installed at the time. After it has been switched on, the Amiga can boot from any of the Hard Drives connected, either to the Power Flyer or to the Standard IDE controller.

A4000 PowerFlyer Gold Edition £79.95

buddha flash

For all Zorro bus Amigas Zorro IDE controller, upto 4 IDE/ATAPI devices, supports LS120, Zip, Syquest and any removable media. Includes special version of IDEfix97. A1200 clock port £49.95

new image fx and aladdin

Amigas most powerful image software - from £29.95

new cd-rewritable drives

4 x 4 x 20 CDRW ATAPI CD-Rewritable Int.	£219.95
4 x 4 x 20 CDRW ATAPI CD-Rewritable Ext.	£329.95
TwinBox with 4 x 4 x 20 CDRW ATAPI CD-Recordable and 3.2GB IDE Hard Drive	£479.95
Box of 10 CDR discs	£14.95
Box of 5 CDRW discs	£39.95

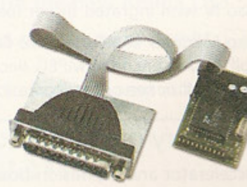
(All the above external bundles include: case, cables. 4-way IDE interface with IDEfix 97 fully registered, MakeCD, 5 x CDR discs and 1 x CDRW Disc)

new allegro cdfs software

- The fastest Amiga CD File System.
- The first Amiga file system to support UDF (the Video DVD format).
- Access to: ISO 9660 level 1, 2 and 3, Joliet (Windows95/98 long name) level 1, 2 and 3 RockRidge (with Amiga Extensions), CDDA, UDF (Video DVD)
- Supports Amiga protection bits
- Supports Multisession
- Supports SCSI and ATAPI devices (CD-ROM, CD-R, CD-RW, DVD)
- Supports direct audio grabbing from standard audio CDs

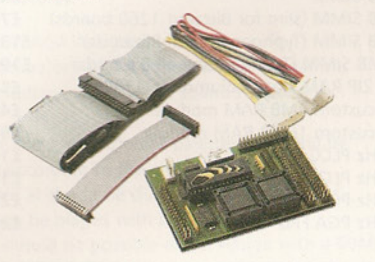
For non-gold edition users Allegro works with EIDE'99 and Powerflyer - available soon

Allegro CDFS only £10



powerport junior

Fast Serial port, upto 460,800 bits per second
32 char. buffer £35.95



catweasel Mk 2

A4000/A1200 advanced floppy drive controller, can use most PC floppy drives £49.95

kylwalda - bootadaptor

To use PC floppy drive as replacement of DF0	£19.95
PC Floppy Disk Drive	£20.00

sundries

Amiga 400DPI Mouse & Mat	£9.95
Boing Mouse & Round Mouse Mat	£9.95
Boing Mouse Mat only	£4.95
CD32 Joypad	£9.95
New 4 way joystick adaptor	£8.95
Original A1200 replacement keyboard (int.)	£14.95
Original A1200 replacement power supply	£9.95

new scala mm400

Multimedia presentation software £55.95

2.5" hard drives

2.5" **160MB** IDE including IDE cable	£49.95
2.5" **810MB** IDE including IDE cable	£69.95
2.5" **3.2GB*** IDE including IDE cable	£129.95
2.5" **4.8GB*** IDE including IDE cable	£196.95
2.5" **6.4GB*** IDE including IDE cable	£209.95
2.5" **10GB*** IDE including IDE cable	£319.95

3.5" hard drives

3.5" **3.2GB*** IDE including IDE cable and install disk	£99.95
3.5" **8.4GB*** IDE including IDE cable and install disk	£149.95
3.5" **13GB*** IDE including IDE cable and install disk	£199.95

Hard drives bigger than 4GB are supported automatically by the PowerFlyer or by IDEfix 97 using the patch provided (an updated FileSystem is available on www.amiga.de). Please note that cables included with 3.5" HD have standard 40pin headers. If you need to connect a 3.5" HD directly to the A1200 motherboard, you will need a 44 high density (2.5") to 40 standard (3.5") IDE 'stack cable' £12.95



new 250MB zip

iomega zip

Zip 100MB external SCSI including Amiga Zip tools, & cable (requires Squirrel or any SCSI interface)	£139.95
Zip 100MB internal ATAPI including 4 way buffered int., EIDE 99 software, IDE cable and 1 cartridge	£99.95
Zip 100MB internal ATAPI (bare unit only)	£75.95
Zip cartridge (100MB)	£12.95
NEW Zip 250MB External SCSI inc. cartridge	£189.95
NEW Zip cartridge (250MB)	£19.95



LS120 drive

LS120 120MB Internal ATAPI including 4 way buffered i/f, EIDE 99 software, IDE cable and 1cartridge	£89.95
LS120 120MB Internal ATAPI (bare unit only)	£69.95
LS120 120MB External ATAPI including 4 way buffered i/f, EIDE 99 software, IDE cable and 1 cartridge	£139.95
LS120 cartridge	£9.95



floppy drives

A500/A600/A1200 Internal Drive	£34.95
A2000 Internal Drive	£39.95
PC Floppy Disk Drive	£20.00
PC880E External for all Amiga models	£39.95
XL 1.76MB External for all Amiga models	£65.95
XL 1.76MB Internal for A4000	£60.95

scsi controller - squirrel interface

Squirrel PCMCIA - suitable for any scsi-device £39.95

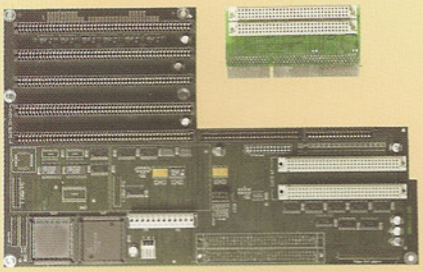
a1200 power tower

Power Tower Bare	£119.95
Power Tower 1 Power Tower plus A1200 motherboard, mouse, PC keyboard and FDD	£319.95
Power Tower 2 Power Tower, A1200 motherboard, mouse, PC keyboard, Typhoon Lite 68030, 8MB of RAM, 3.2GB Hard Disk, 4-way IDE buffered interface, EIDE 99 software and FDD	£499.95
Power Tower 3 Power Tower, A1200 motherboard, mouse, PC keyboard, Typhoon Lite 68030, 16MB of RAM, 32x CD-ROM, 3.2GB Hard Disk, 4-Way IDE buffered interface, EIDE 99 and FDD	£579.95
Power Tower 4 Power Tower plus A1200 motherboard, mouse, PC keyboard, FDD, 68030 40MHz, 40MHz FPU, 32MB of RAM, 32x IDE CD-ROM drive, internal ATAPI 100MB Zip drive and 1 cartridge, 3.2GB Hard Disk, internal Scan Doubler inc. Flicker Fixer, 15" SVGA monitor, 4-Way IDE buffered interface inc. EIDE 99 and external audio port with speakers	£899.95

new a4000 power tower

New tower case for the A4000 includes: 7-slot Zorro II/III bus board, 2 video slots, 5 PC-ISA slots, 230 watt PSU, 3 x 5.25" external bays, 2 x 3.5" external bays and 6 x 3.5" internal bays £189.95

New Z4 and bundles!



the new A1200 tower Z4 board

Z4 the ultimate bus board for Zorro II boards, inc:

Five Zorro II slots • One video slot aligned with the first Zorro slot for all major graphics cards • Option Video slot enabler for users of card with scan doubler or flick fixer • Four A1200 style clock ports • Connector for rest cable • Jumpers to activate double speed transfers on the first two slots • Floppy drive power lead connector for CVPPC users • Two extra fast Z4 slots for future ultra fast cards • Pass through and compatibility jumpers for all major accelerator cards.

The Z4 board (for A1200 Power Tower)	£125.95
Video Slot Enabler	£24.95
Z4 inc. Apollo 68040 28MHz accelerator	£199.95
Z4 inc. Blizzard 1240 40MHz accelerator	£239.95
Twister Mk2 Fast Serial Interface	£24.95

power tower accessories

Too many accessories to list - please call for you requirements

Power SCSI adaptor, internal to external SCSI adaptor (external DB-25 pin female connector, internal 50 pin header, internal DB-25 pin male connector £19.95

new amiga 1200 motherboards

A1200 motherboard with ROMs £125.95

For more technical details checkout our web-site - A4000 Tower now available!



amiga 1200 magic pack

Amiga, 3.1 OS, 2MB, 68020 CPU and AGA chipset. Sofware includes: Wordworth 4.5SE, Turbocalc 3.5, Datastore 1.1, Photogenic 1.2SE, Personal Paint 6.4, Organiser 1.1, Pinball Mania and Whizz

Amiga Magic Pack	£169.95
as above plus 160MB HD	£199.95

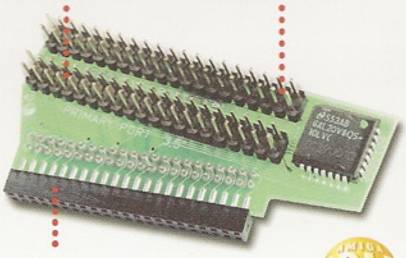


Universal PC/Amiga interface

keyboards & interfaces

A1200 desktop universal keyboard int.	£19.95
A1200 tower universal keyboard int.	£19.95
PC Keyboard interface only (A1200)	£19.95
Amiga Keyboard interface only (A1200)	£19.95
Original A4000 keyboard only*	£39.95
Original PC keyboard only*	£14.95

*requires keyboard interface



4way buffered interface/EIDE'99 s/w

- Supports all IDE and ATAPI removable devices
- Autoboot from Zip and LS-120 drives
- 4 IDE/EIDE/ATAPI devices support
- Includes Allegro CDFS - the fastest Amiga CD file system, supports video DVD format

4way buffered Int. & EIDE'99 Gold Edition £29.95

new mk3 4way buffered int./IDEFix 97

- Includes cable to connect to the motherboard
- Supports all IDE and ATAPI removable devices
- Autoboot from ZIP and LS-120
- Includes CacheCD file system

MK3 4way buffered Int. & IDEFix 97 software £19.95

PHONE ORDERS We accept most major credit cards and are happy to help you with any queries. **CHEQUES/POSTAL ORDERS** Ordering by cheque/PO please make payable to POWER COMPUTING LTD and specify which delivery is required. **WARRANTY** All Power products come with a 12 month warranty unless otherwise specified. **TECHNICAL SUPPORT** Help is on hand with a full Technical Backup service which is provided for Power customers. **MAIL ORDER PRICES** All prices listed are for the month of publication only, call to confirm prices before ordering. **EXPORT ORDERS** Most items are available at Tax Free Prices to non-EC residents. Call to confirm prices. **BFPO** orders welcome. **MAIL ORDER TERMS** All prices include VAT. Specifications and prices are subject to change without notice. All trademarks are acknowledged. All orders in writing or by telephone will be accepted only subject to our terms and conditions of trade, copies of which are available on request. Please allow up to 7 days for cheques to clear before dispatching of the goods.









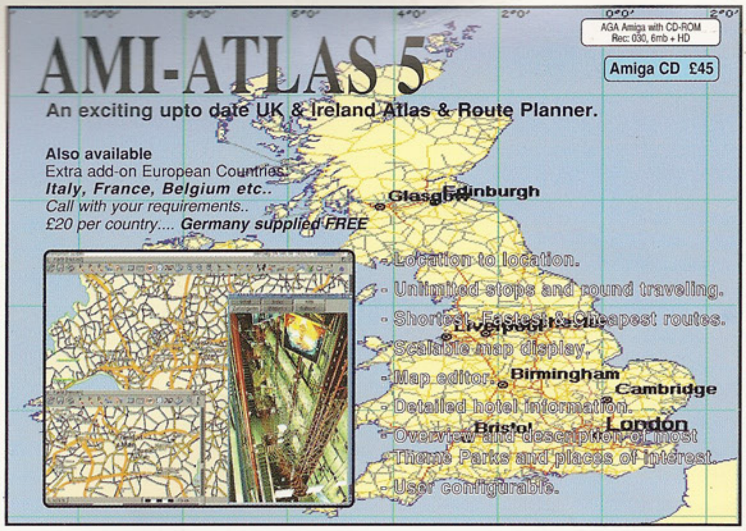


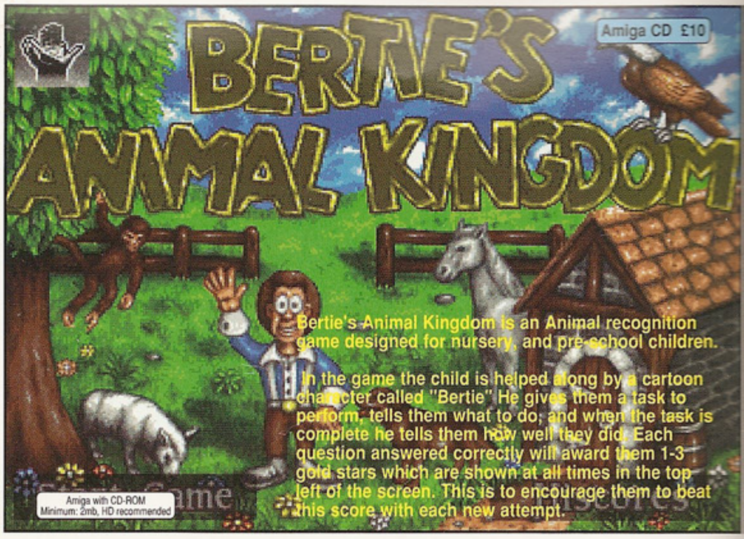
tel 01234 851500 fax 01234 855400

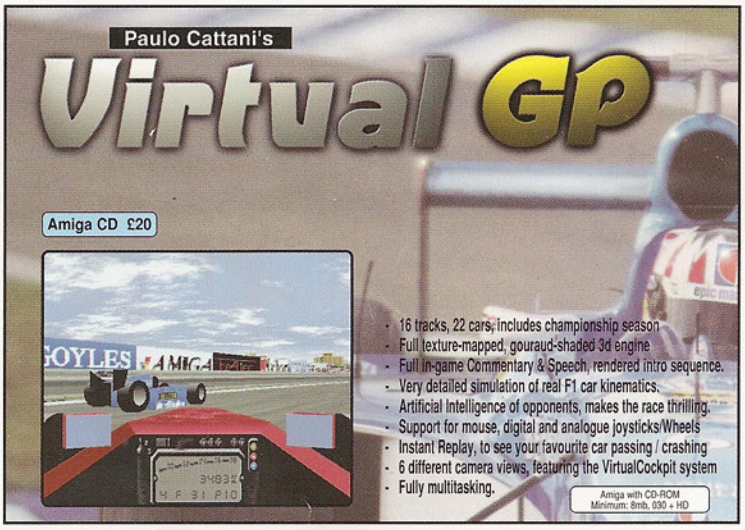
internet www.powerc.com email sales@powerc.demon.co.uk

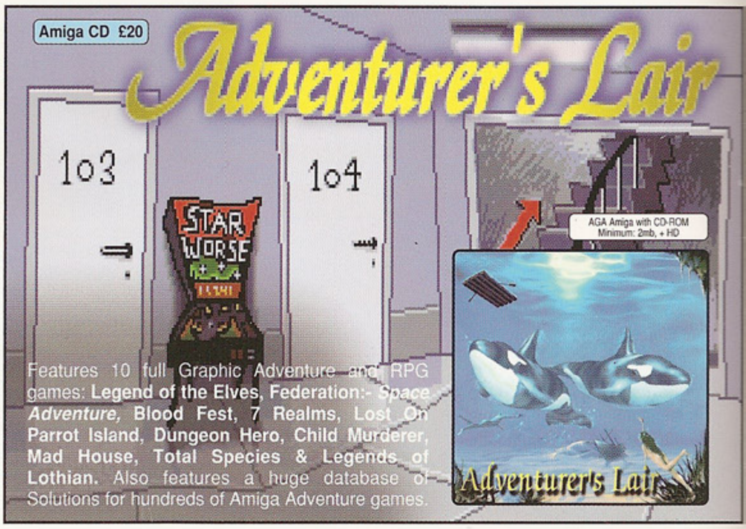
Unit 82a, Singer Way, Woburn Road Ind Estate, Kempston MK42 7PU

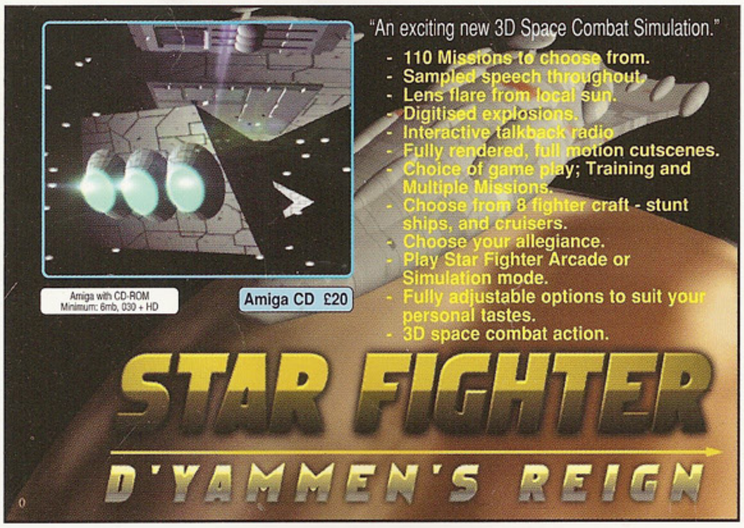
delivery 2-3 days £5 next day £8 saturday £15 northern ireland £15 monitor/tower £8 (u.k. mainland only)

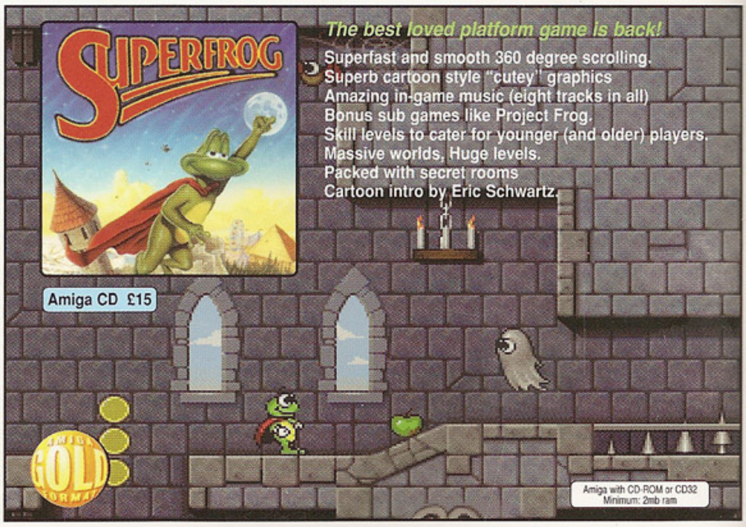
















FREE SOFTWARE EXPLOSION 3 CD

Purchase any two titles and receive the brand new Software Explosion 3 CD. The third in the series of highly rated compilation CD's Software Explosion 3 contains a colossal array of Amiga Software. Includes a wealth of new HD installer's for many "older" games. Over a dozen of the very latest "power" demo's to really show off the power of your Amiga. A huge new database of around 5,000 game Hints, Tips & Cheats. Also featured on the CD are a number of exclusive game previews. Along with many Games, Tools, Pictures, Mods and much more...

Don't forget to request it when ordering....

epic marketing
innovative and Original

Epic Marketing:(AF) BSS House, Area50, Cheney Manor, Swindon. SN2 2PJ, UK

www.epicmarketing.ltd.net

HOTLINE **08700 110013**

Enquiries: 0 1793 514188 *Fax:* 0 1793 514187

Catalogue Requests: 0906 553 1900

This call will cost you about £1, redeemable against first purchase.

CREDIT CARD ORDERS WELCOME

POSTAGE

UK: £2.95 per order. **Overseas:** £5 per order. Hardware delivery in the UK costs between £5 - £10 (call for price) ***Minimum Order £5***

All items are sold subject to our normal terms and conditions and are subject to availability. Credit card orders are normally dispatched within 48 hours. E&OE
All prices include VAT. Cheques and Postal Orders should be made payable to **EPIC Marketing.** *Ask fro the Free CD when ordering.*